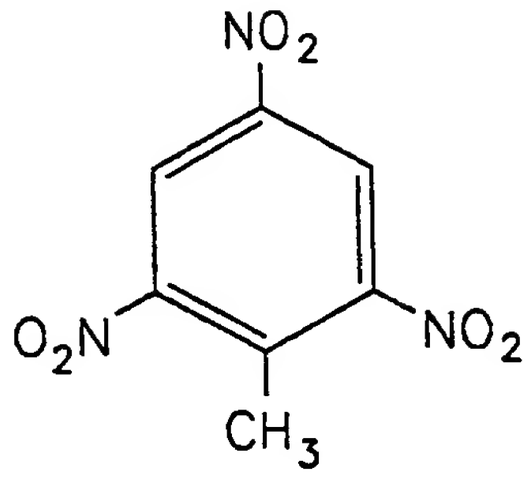
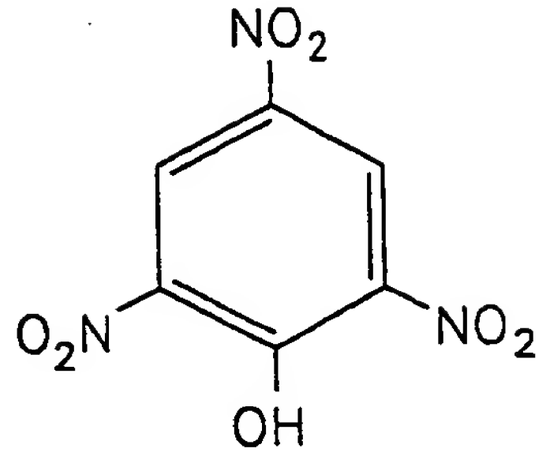
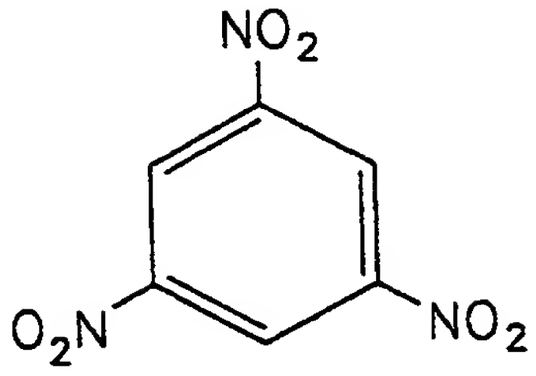


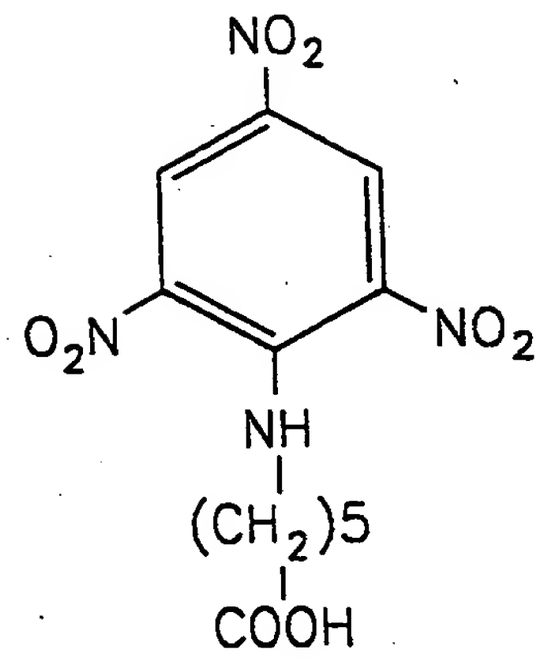
TNT



TNP



TNB



TNP-cap

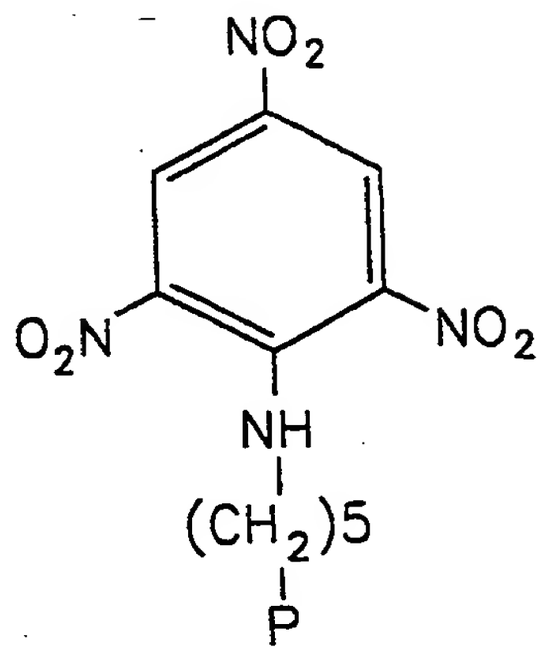
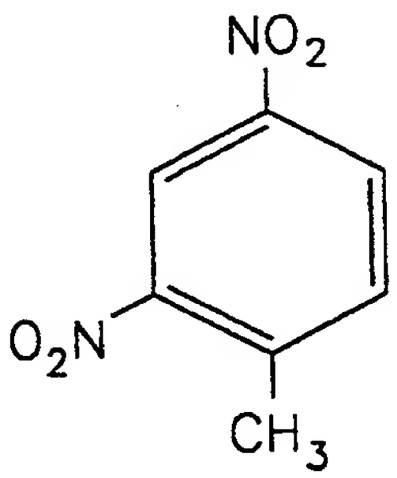
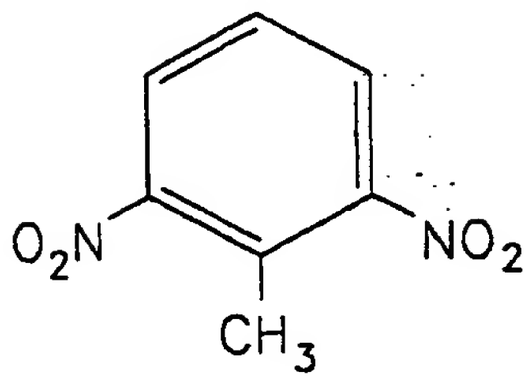


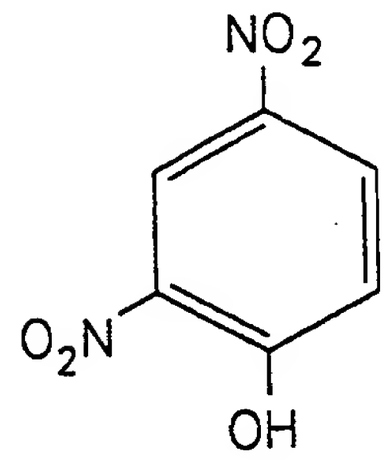
FIG.1A



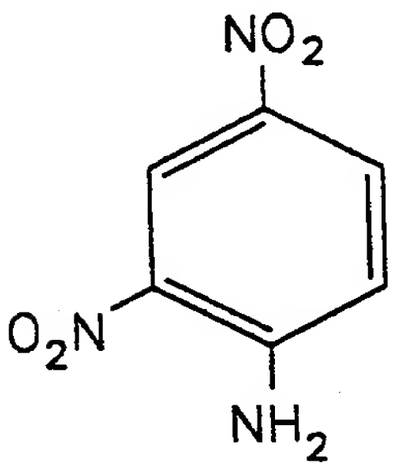
2,4-DNT



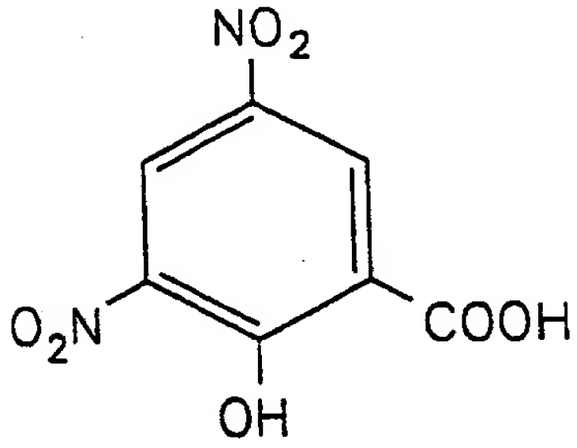
2,6-DNT



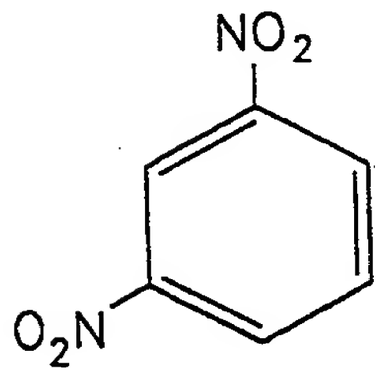
2,4-DNP



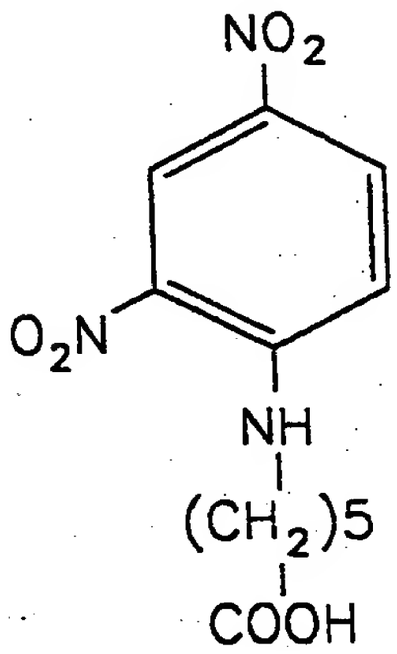
2,4-DNA



DNS



m-DNB



2,4-DNP-cap

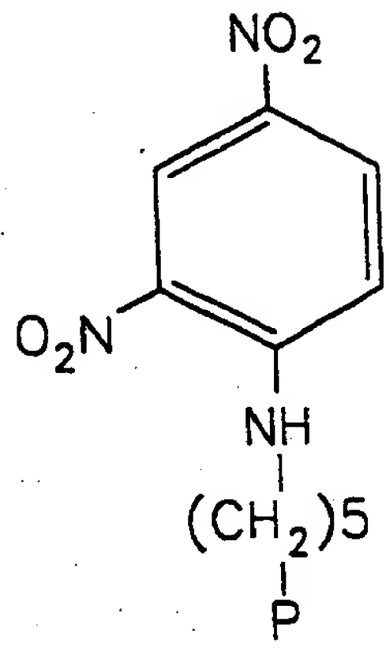


FIG.1B

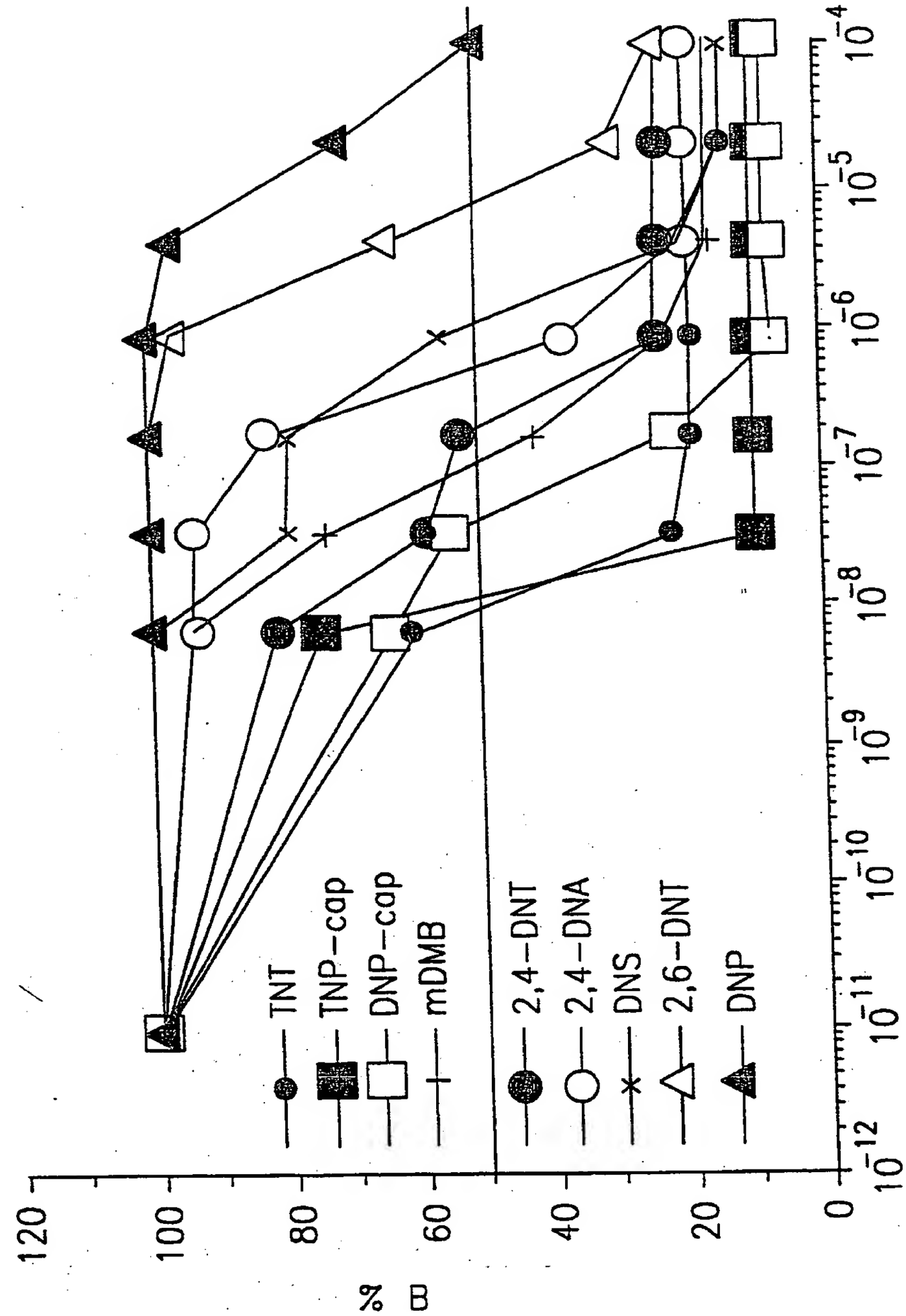


FIG.2A

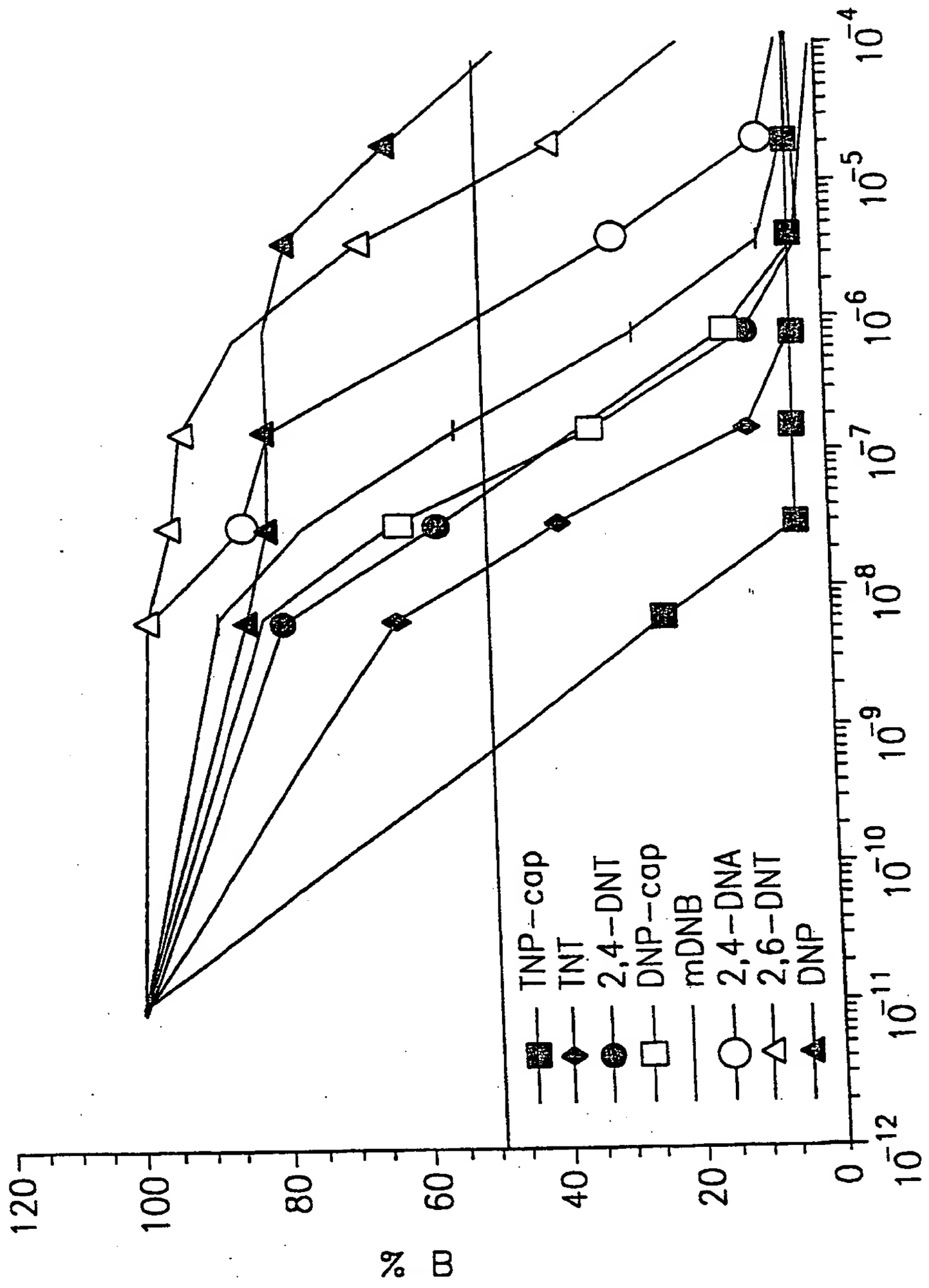


FIG.2B

```
1    ATG AGA GTG CTG ATT CTT TTG TGG CTG TTC ACA GCC TTT CCT GGT ATC CTG TCT GAT GTG  60
       M   R   V   L   I   L   L   W   L   F   T   A   F   P   G   I   L   S   D   V

61   CAG CTT CAG GAG TCG GGA CCT GGC CTG GTG AAG CCT TCC CAG TCT CTG TCC CTC ACC TGC 120
       Q   L   Q   E   S   G   P   G   L   V   K   P   S   Q   S   L   S   L   T   C

121  TCT GTC ACT GGT TAC TCA ATC ACC AGT GGT TIT GCC TGG AAC TGG ATC CGG CAG TTT CCA 180
       S   V   T   G   Y   S   I   T   S   G   Y   A   W   N   W   I   R   Q   F   P

181  GGA AAC AAA CTG GAG TGG ATG GGC TAC ATA AGC TAC AGT GGT TTC ACT AGC TAC AAC CCA 240
       G   N   K   L   E   W   M   G   Y   I   S   Y   S   G   F   T   S   Y   N   P

241  TCT CTC AGA AGT CGA ATC TCT TTC ACT CGA GAC ACA TCC AAG AAC CAG TTC TTC CTG CAG 300
       S   L   R   S   R   I   S   F   T   R   D   T   S   K   N   Q   F   F   L   Q

301  TTG AAT TCT GTG ACT TCT GAG GAC ACA GCC ACA TAT TAC TGT GCA AGA TGG GAC TAC GGT 360
       L   N   S   V   T   S   E   D   T   A   T   Y   X   C   A   R   W   D   Y   G

361  ACT ACC TAC GGG TAC TTC GAT GTC TGG GGC CAA GGG ACT ACG GTC ACC 408
       T   T   Y   G   Y   F   D   V   W   G   Q   G   T   G   V   T
                                   N3'VH   (J1)
```

FIG.3A

```
1    TCT AGA GGA GAT ATC GTT ATG ACC CAG TCT CCA TCC TCC CTG AGT GTG TCA GCA GGA GAG  60
       S   R   G   D   I   V   M   T   Q   S   P   S   S   L   S   V   S   A   G   E

61   AAG GTC ACT ATG AGC TGC AAG TCC AGT CAG AGT CTG TTA AAC AGT AGA AAT CAA AAG AAC 120
       K   V   T   M   S   C   K   S   S   Q   S   L   L   N   S   R   N   Q   K   N

121  TAC TTG GCC TGG TAC CAG CAG AAA CCA GGA CAG CCT CCT AAA CTT TTG ATC TAC GGG GTA 180
       Y   L   A   W   Y   Q   Q   K   P   G   Q   P   P   K   L   L   I   Y   G   V

181  TTT ATT AGG GAT TCT GGG GTC CCT GAT CGC TTC ACA GGC AGT GGA TCT GGA ACC GAT TTC 240
       F   I   R   D   S   G   V   P   D   R   F   T   G   S   G   S   G   T   D   F

241  ACT CTT ACC ATC AGC AGT GTG CAG GCT GAA GAC CTG GCA GTT TAT TAC TGT CAG AAT GAT 300
       T   L   T   I   S   S   V   Q   A   E   D   L   A   V   Y   Y   C   Q   T   D

301  CAT ATT TAT CCG TAC ACG TTC GGA GGG GGG ACC AAG CTG GAA ATA AAA 348
       H   I   Y   P   Y   T   F   G   G   G   T   K   L   E   I   K
```

FIG.3B

PCT/IL00/00048

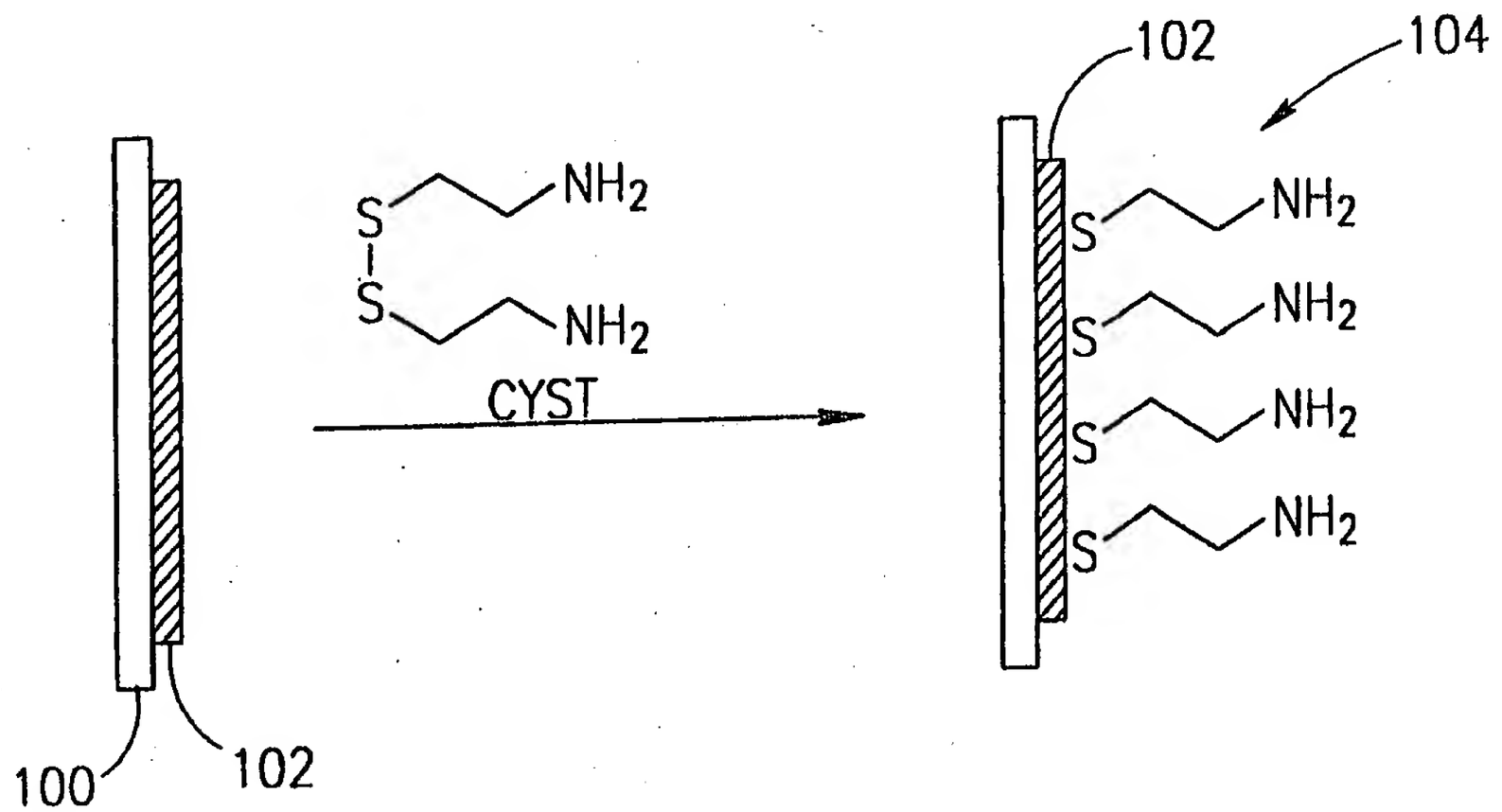
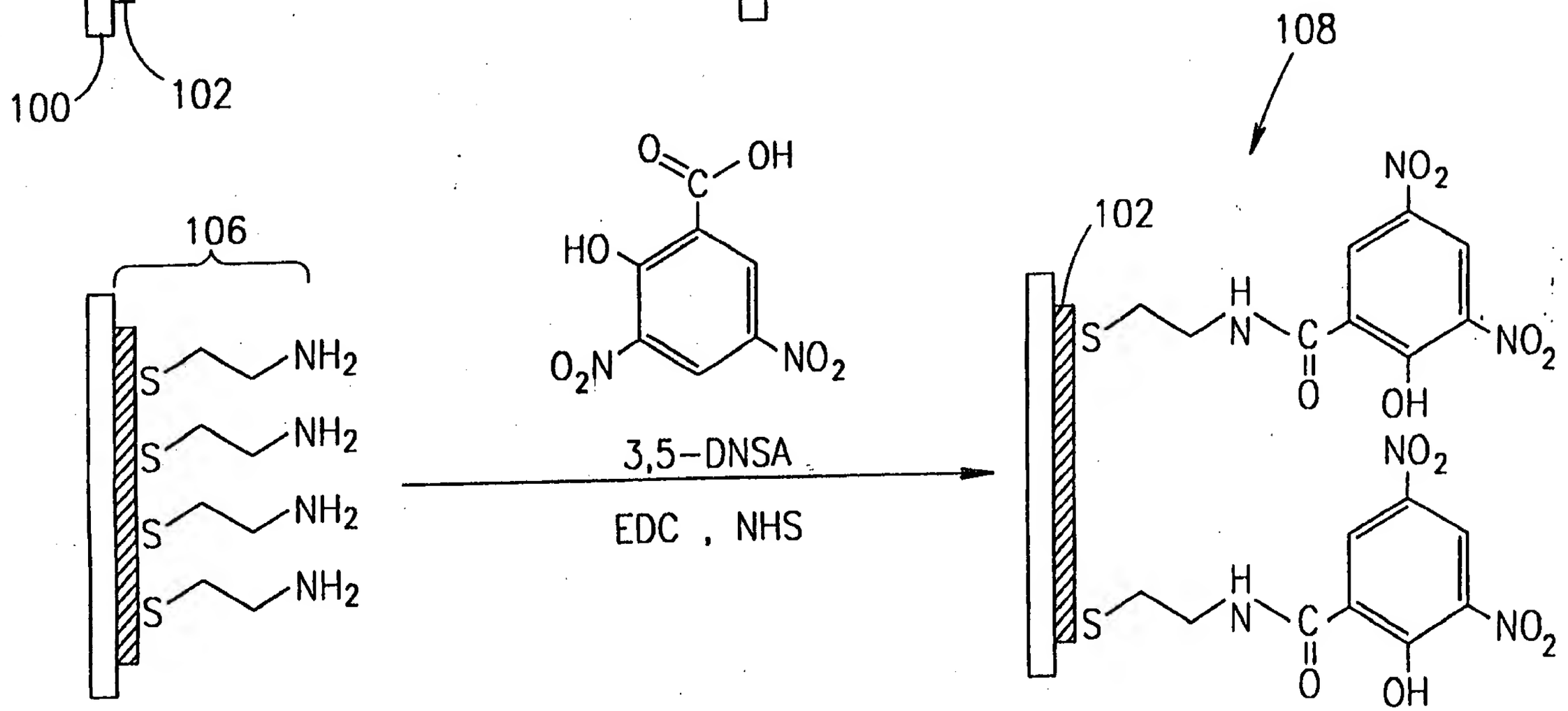

100
102
S
S
NH2
NH2
CYST
102
104
S
NH2
S
NH2
S
NH2
S
NH2

FIG.4


108
106
S
NH2
S
NH2
S
NH2
S
NH2
O
C
OH
HO
O2N
NO2
3,5-DNSA
EDC , NHS
102
S
H
N
C
O
NO2
OH

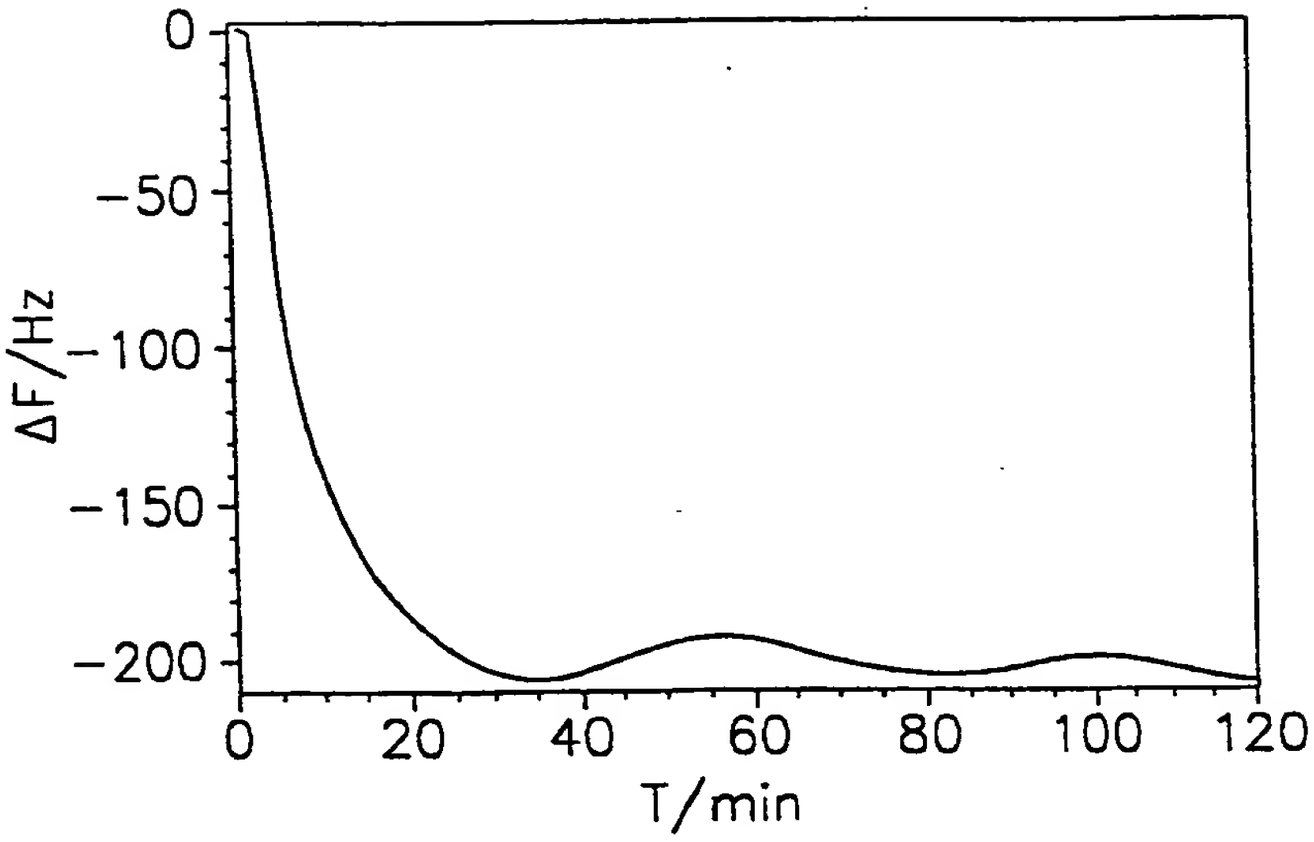

0
-50
-100
-150
-200
ΔF/Hz
0
20
40
60
80
100
120
T/min

FIG.5

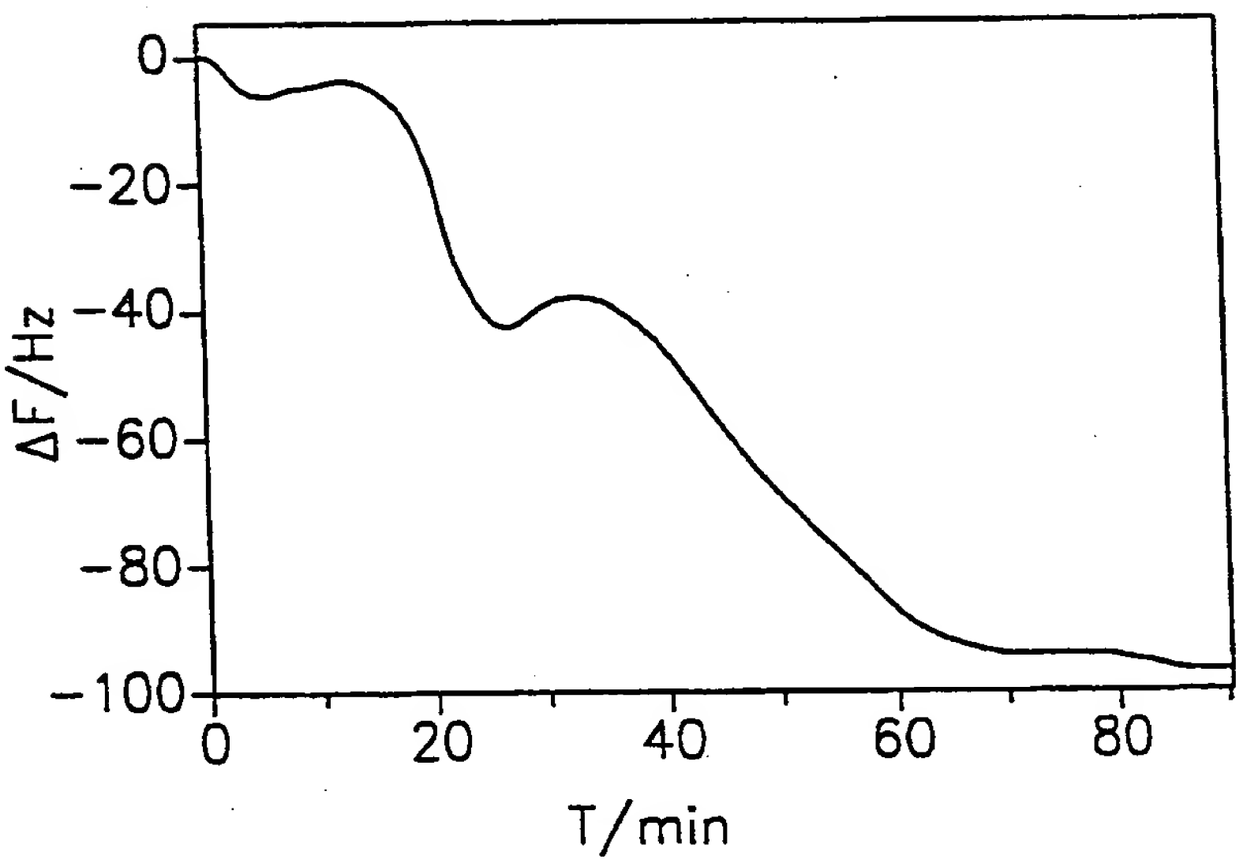

0
-20
-40
-60
-80
-100
ΔF/Hz
0
20
40
60
80
T/min

FIG.6

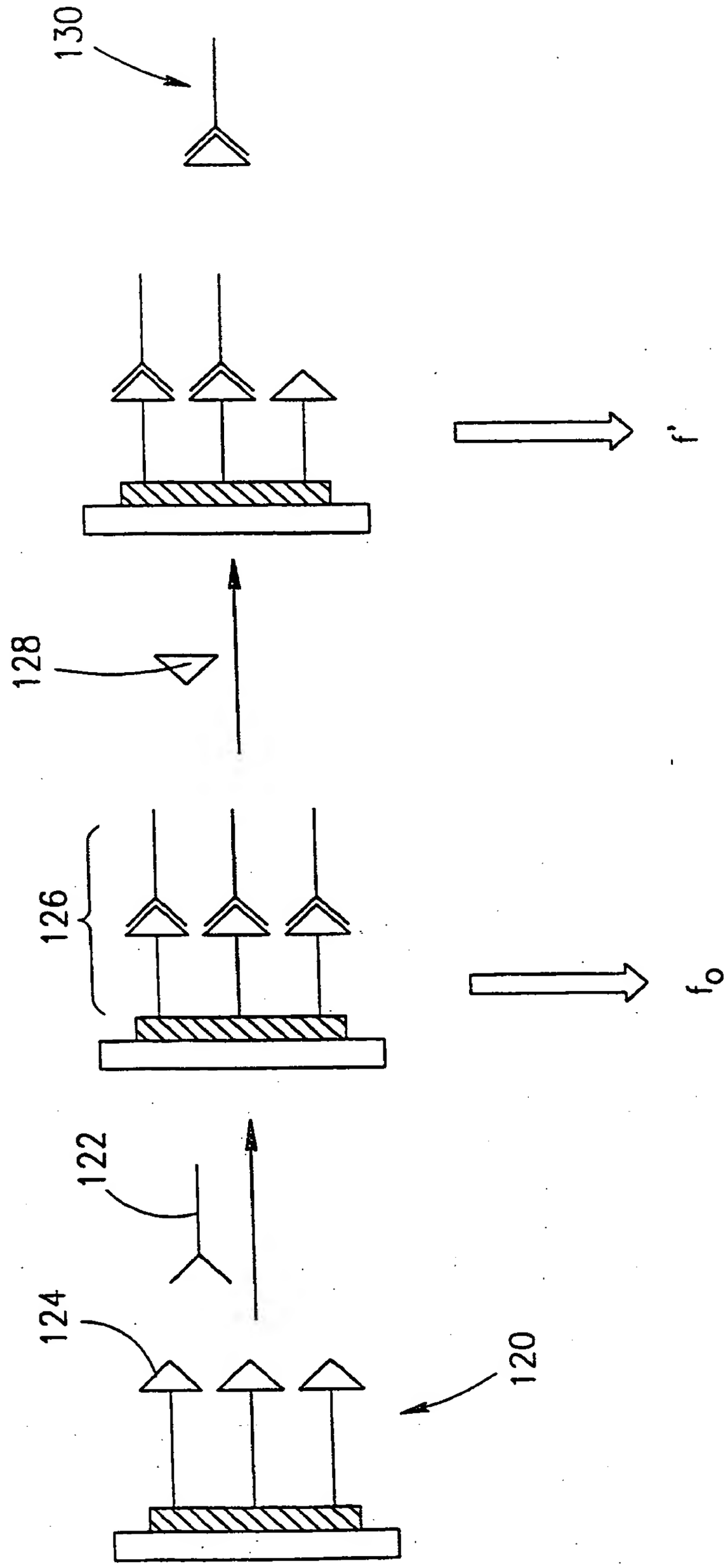


FIG.7

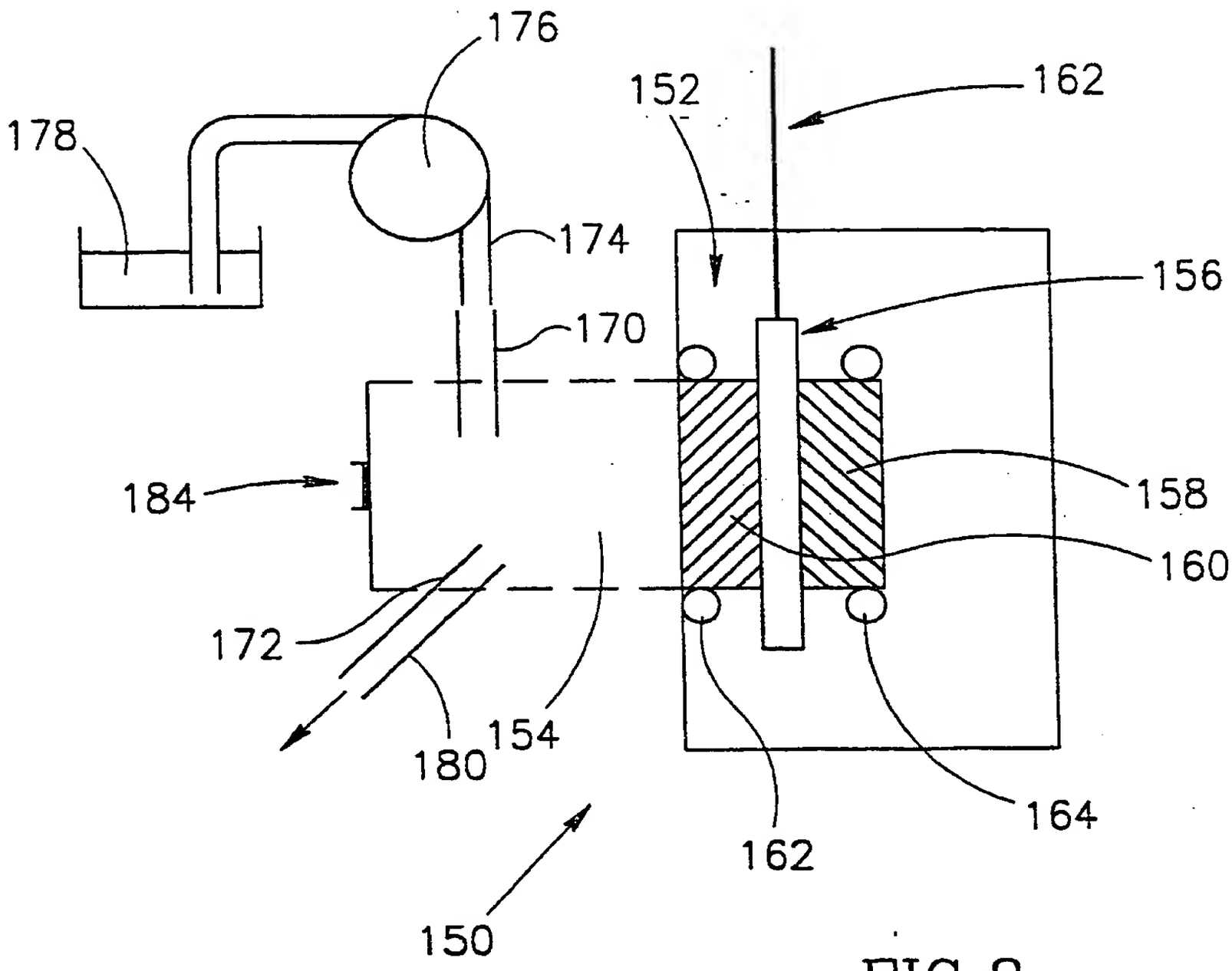

176
178
152
162
174
156
170
184
158
160
172
154
180
164
162
150

FIG.8

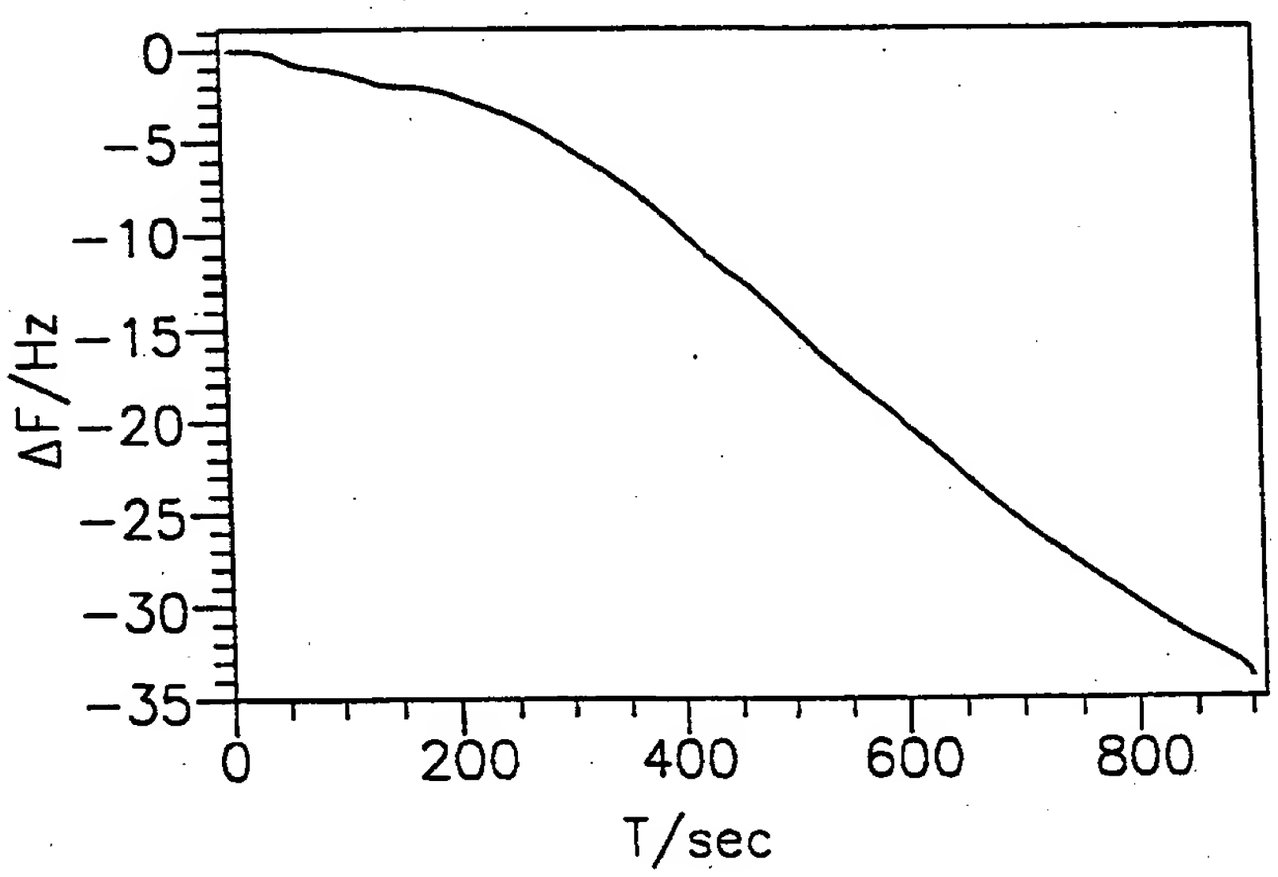

0
-5
-10
-15
-20
-25
-30
-35
ΔF/Hz
0
200
400
600
800
T/sec

FIG.9

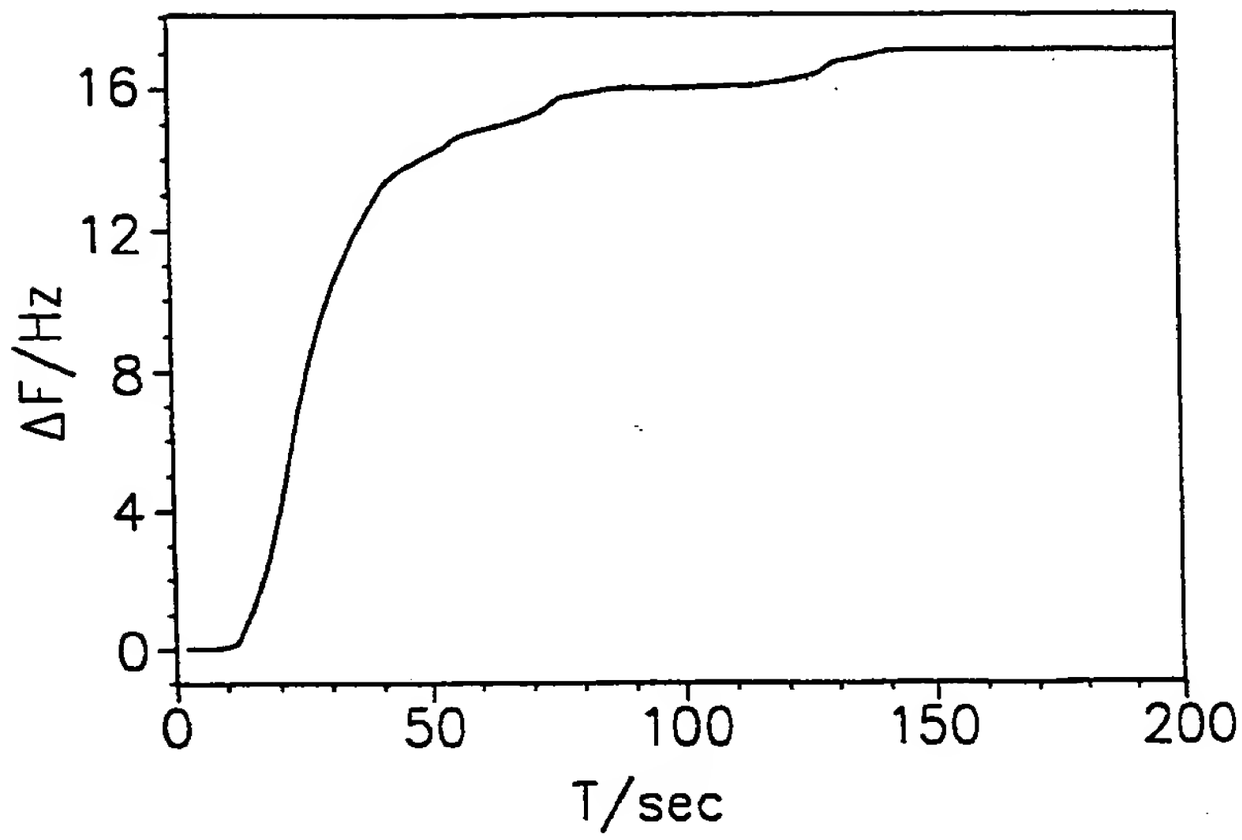

16
12
8
4
0
ΔF/Hz
0
50
100
150
200
T/sec

FIG.10

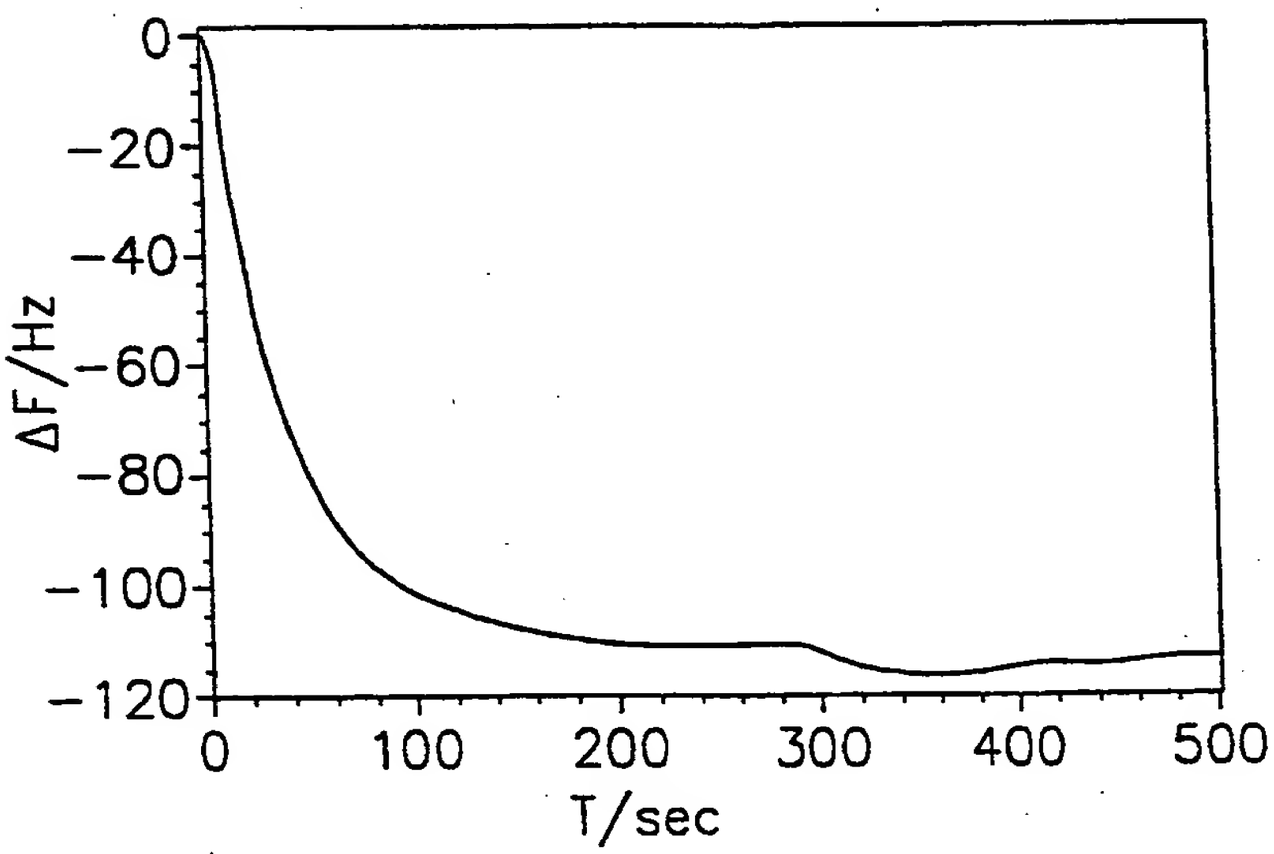

0
−20
−40
−60
−80
−100
−120
ΔF/Hz
0
100
200
300
400
500
T/sec

FIG.11

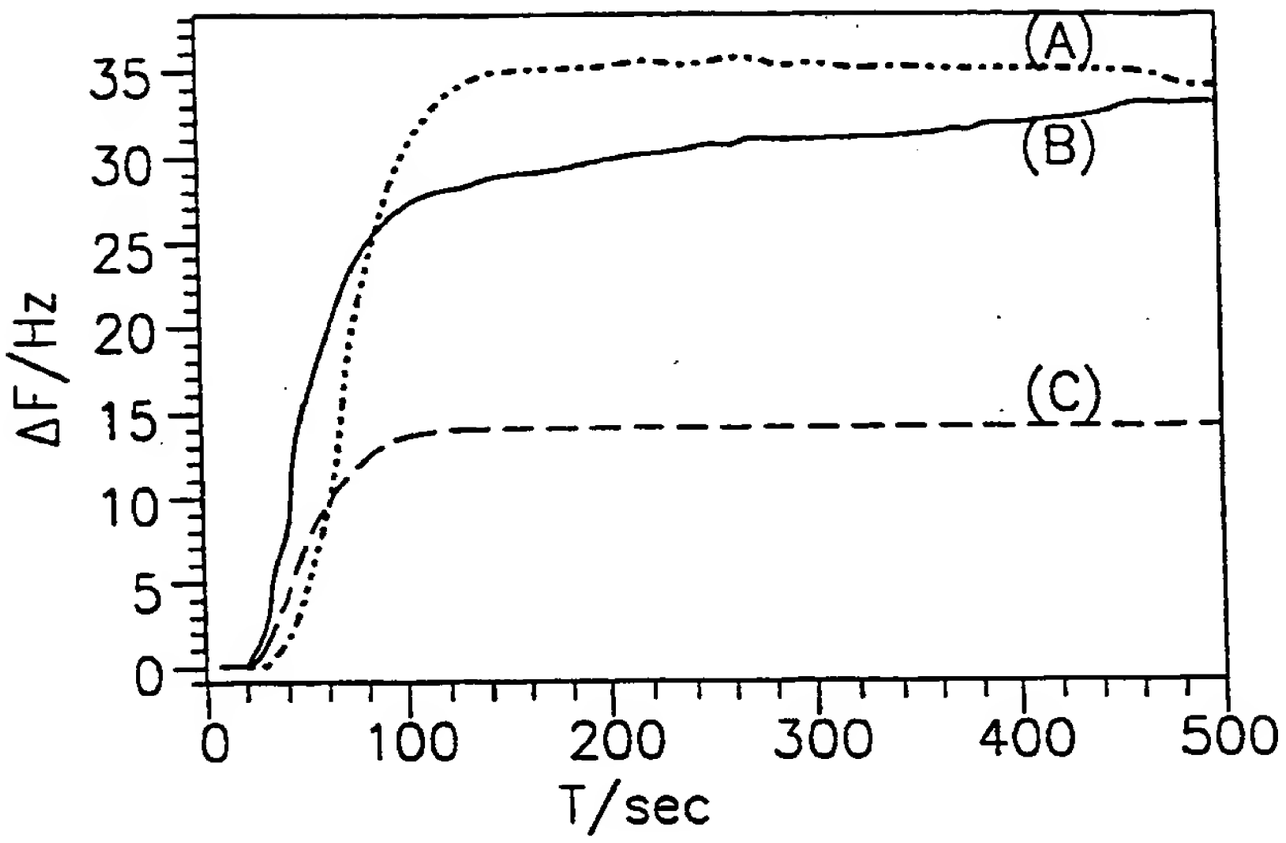

(A)
(B)
(C)
ΔF/Hz
35
30
25
20
15
10
5
0
0
100
200
300
400
500
T/sec

FIG.12

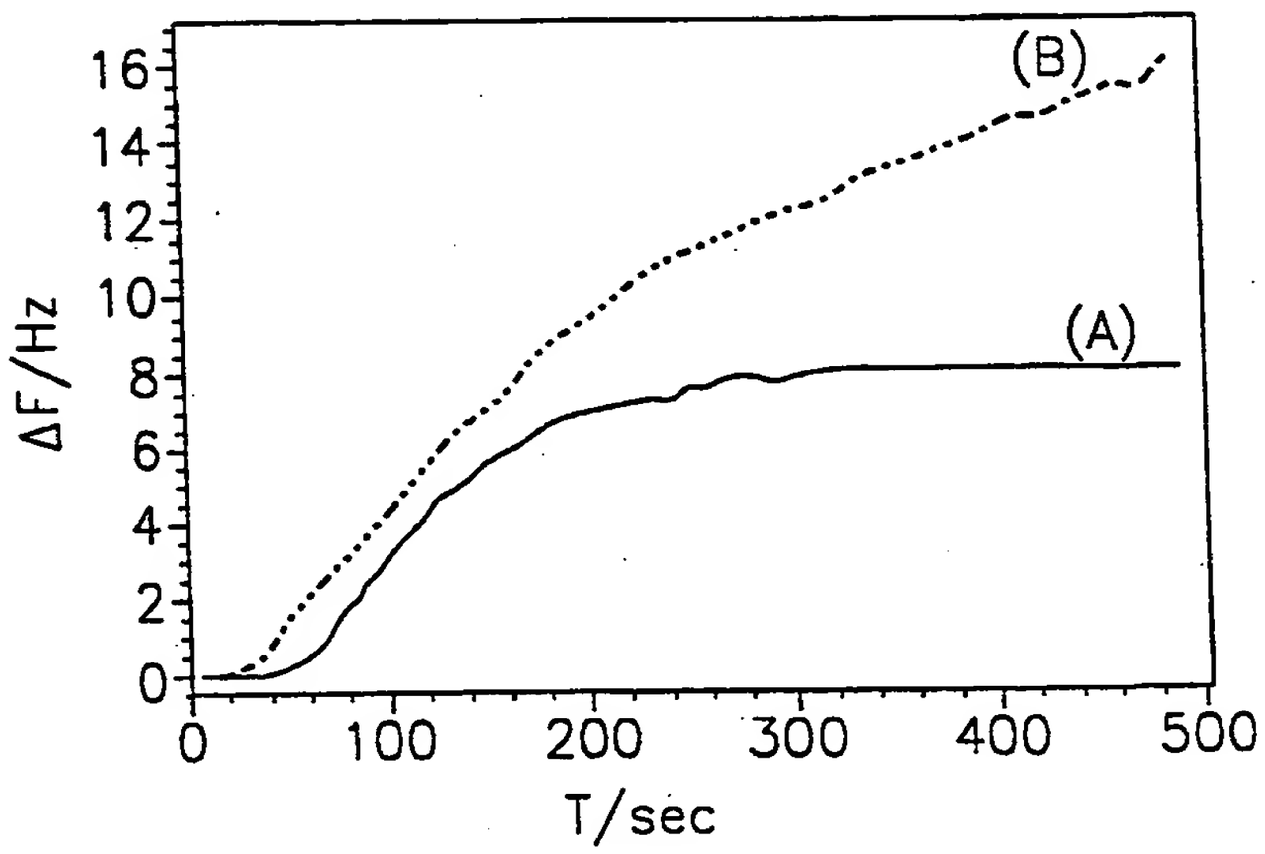

(B)
(A)
ΔF/Hz
16
14
12
10
8
6
4
2
0
0
100
200
300
400
500
T/sec

FIG.13

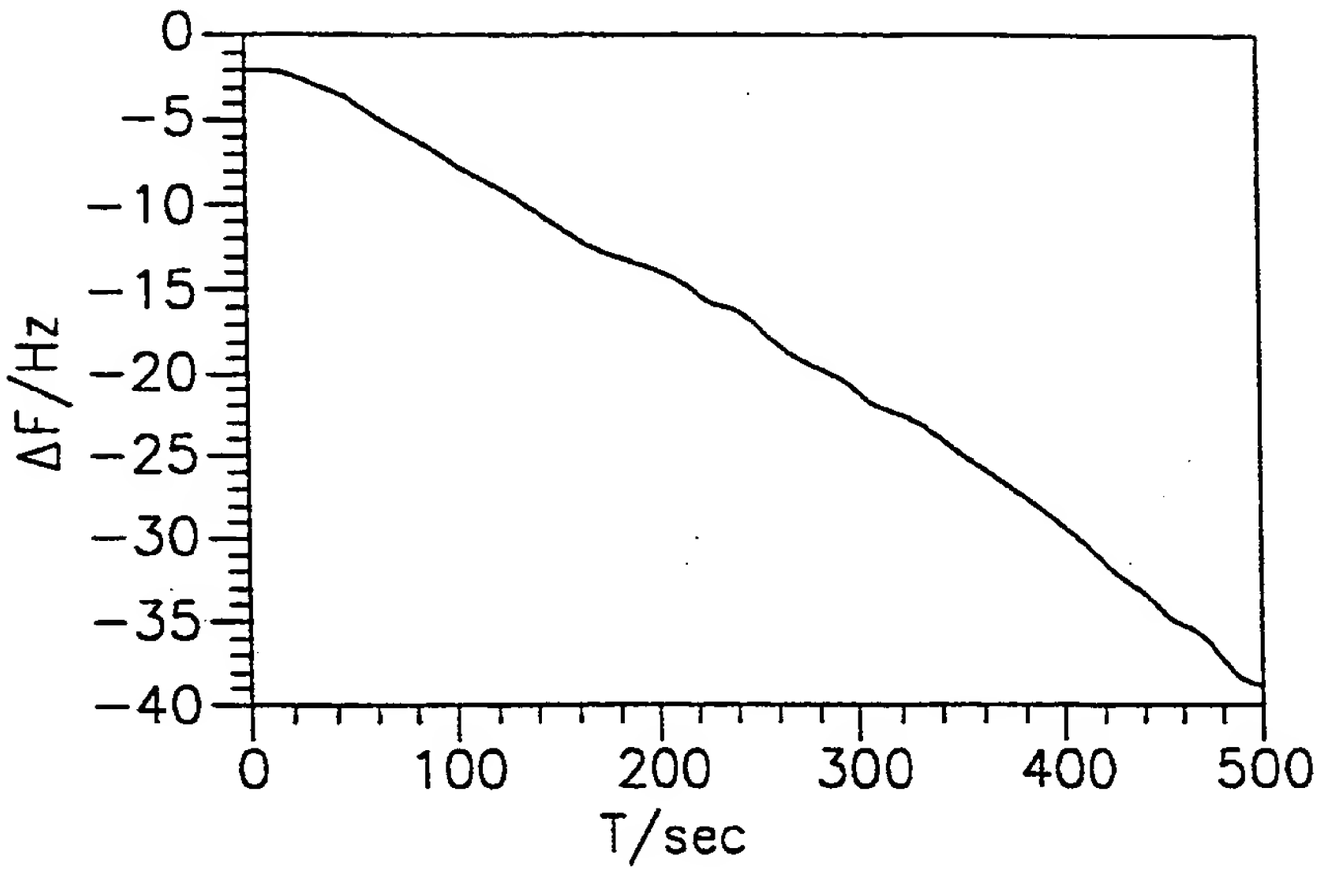

0
-5
-10
-15
-20
-25
-30
-35
-40
ΔF/Hz
0
100
200
300
400
500
T/sec

FIG.14

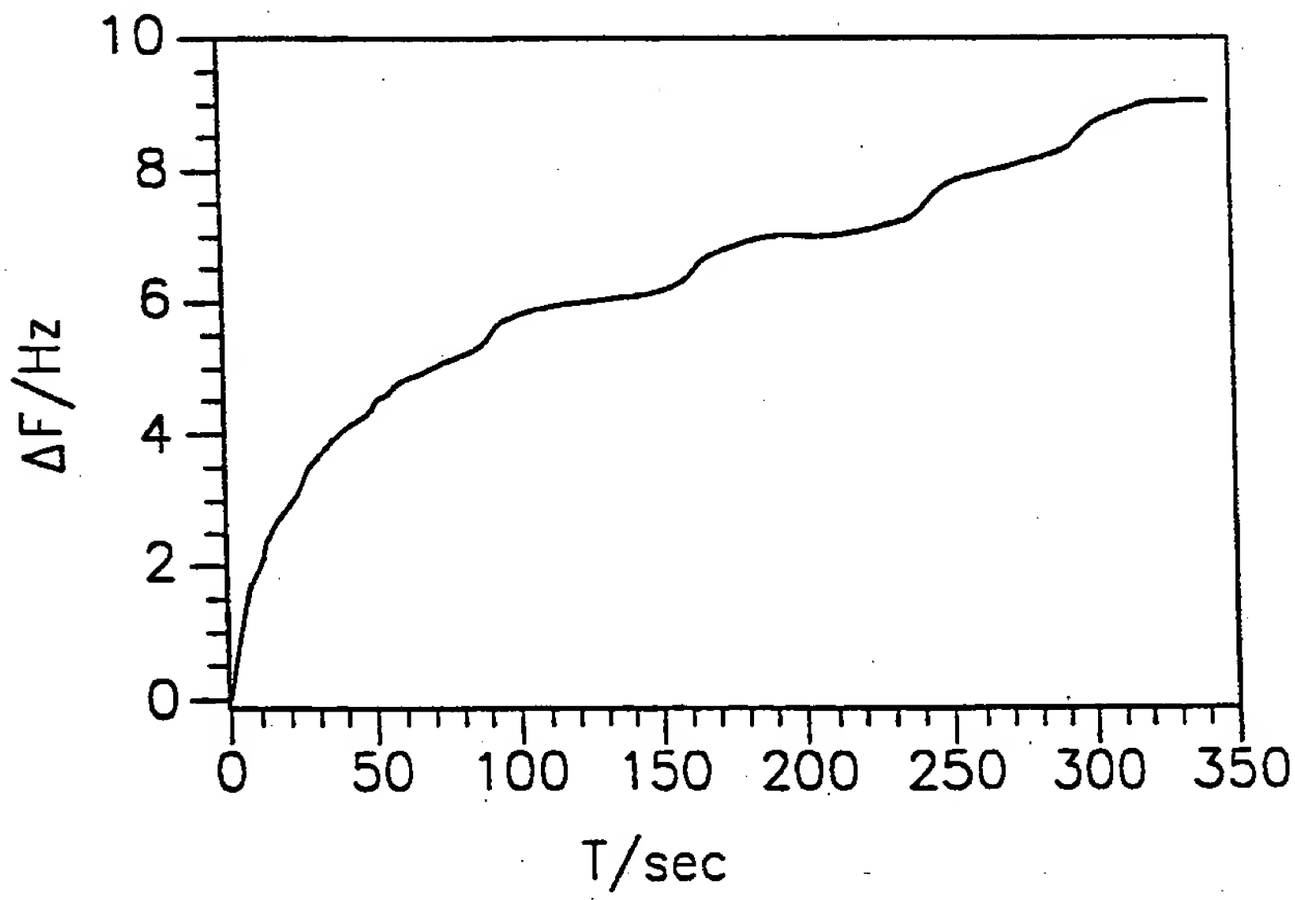

10
8
6
4
2
0
ΔF/Hz
0
50
100
150
200
250
300
350
T/sec

FIG.15

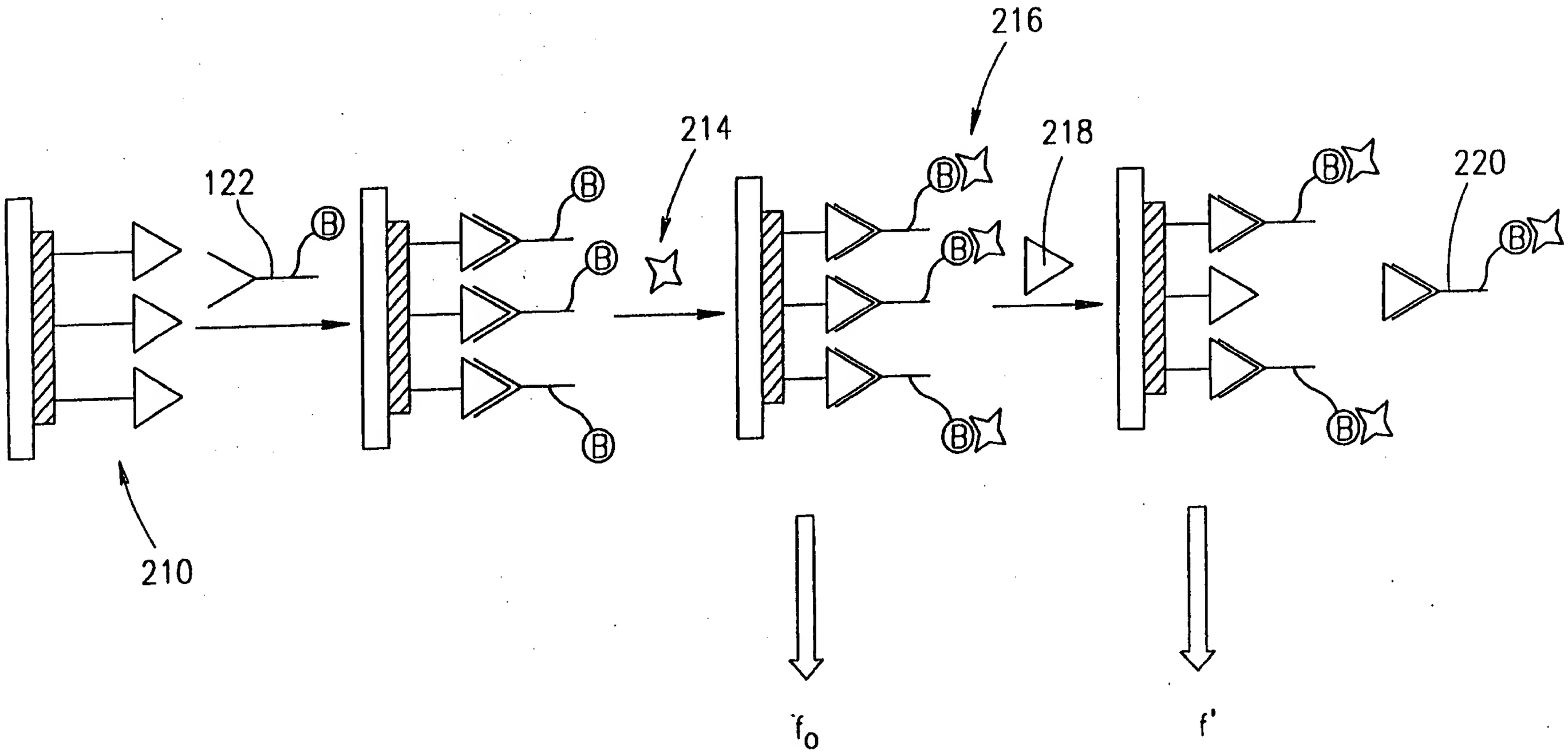


FIG.16

09/889936
PCT/IL00/00048

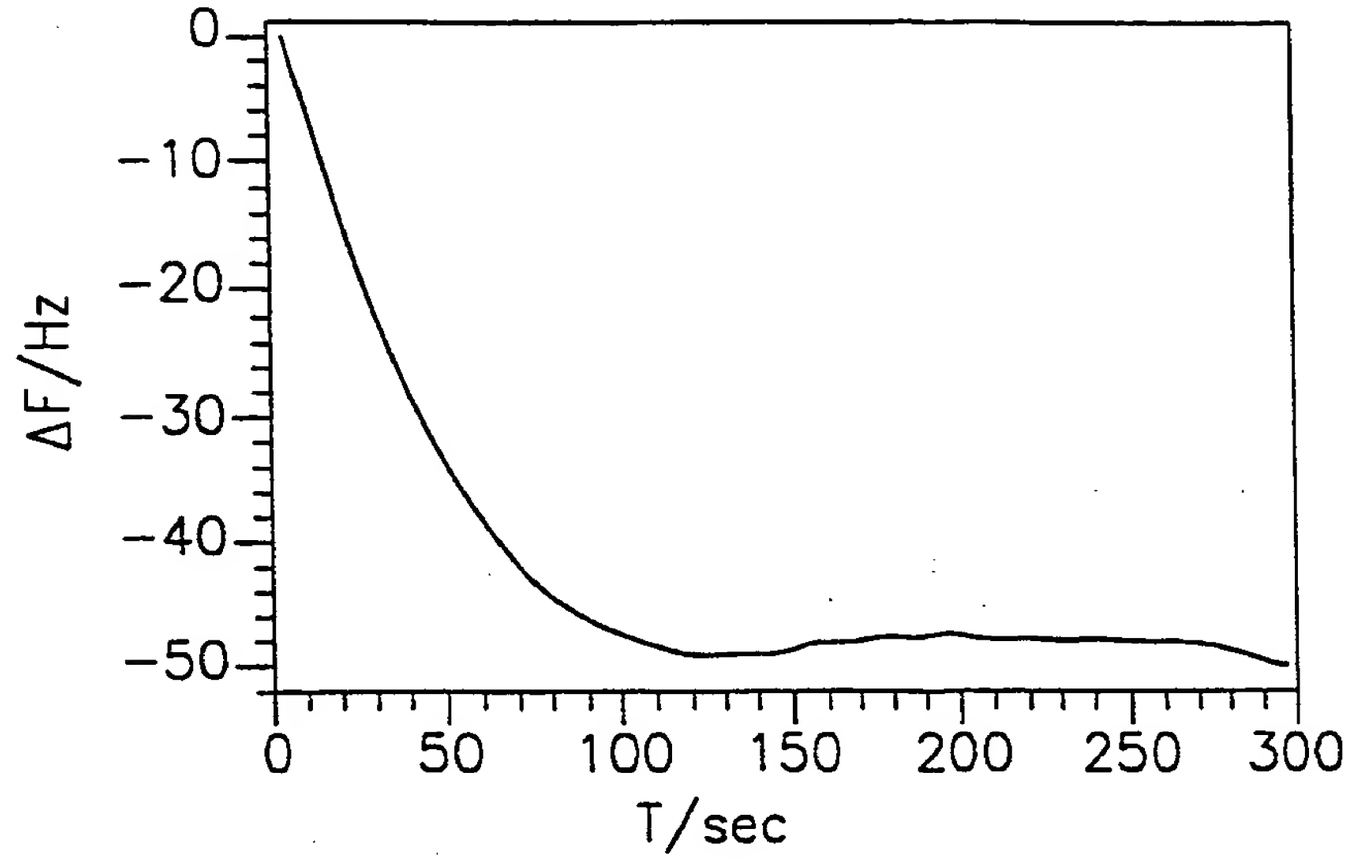

0
-10
-20
-30
-40
-50
ΔF/Hz
0
50
100
150
200
250
300
T/sec

FIG.17

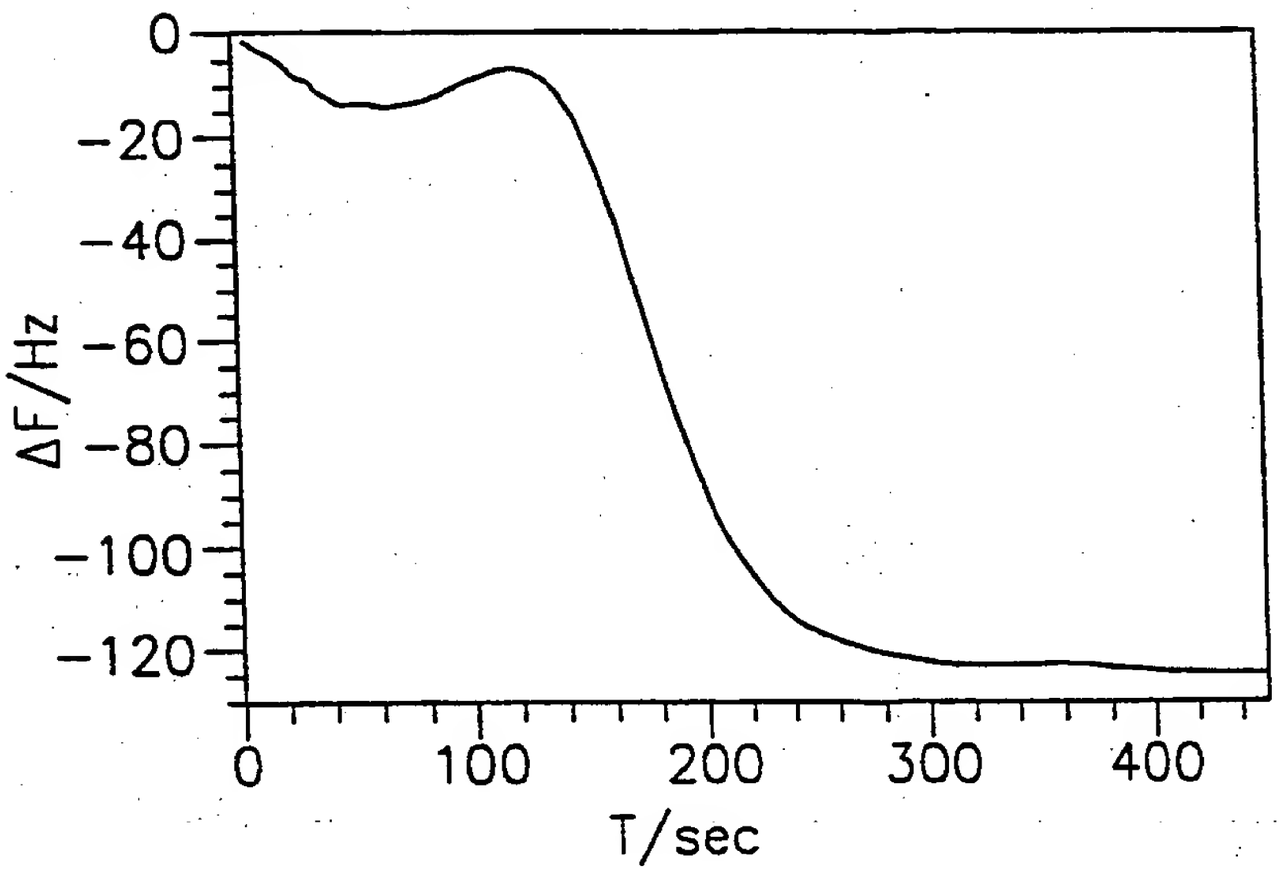

0
-20
-40
-60
-80
-100
-120
ΔF/Hz
0
100
200
300
400
T/sec

FIG.18

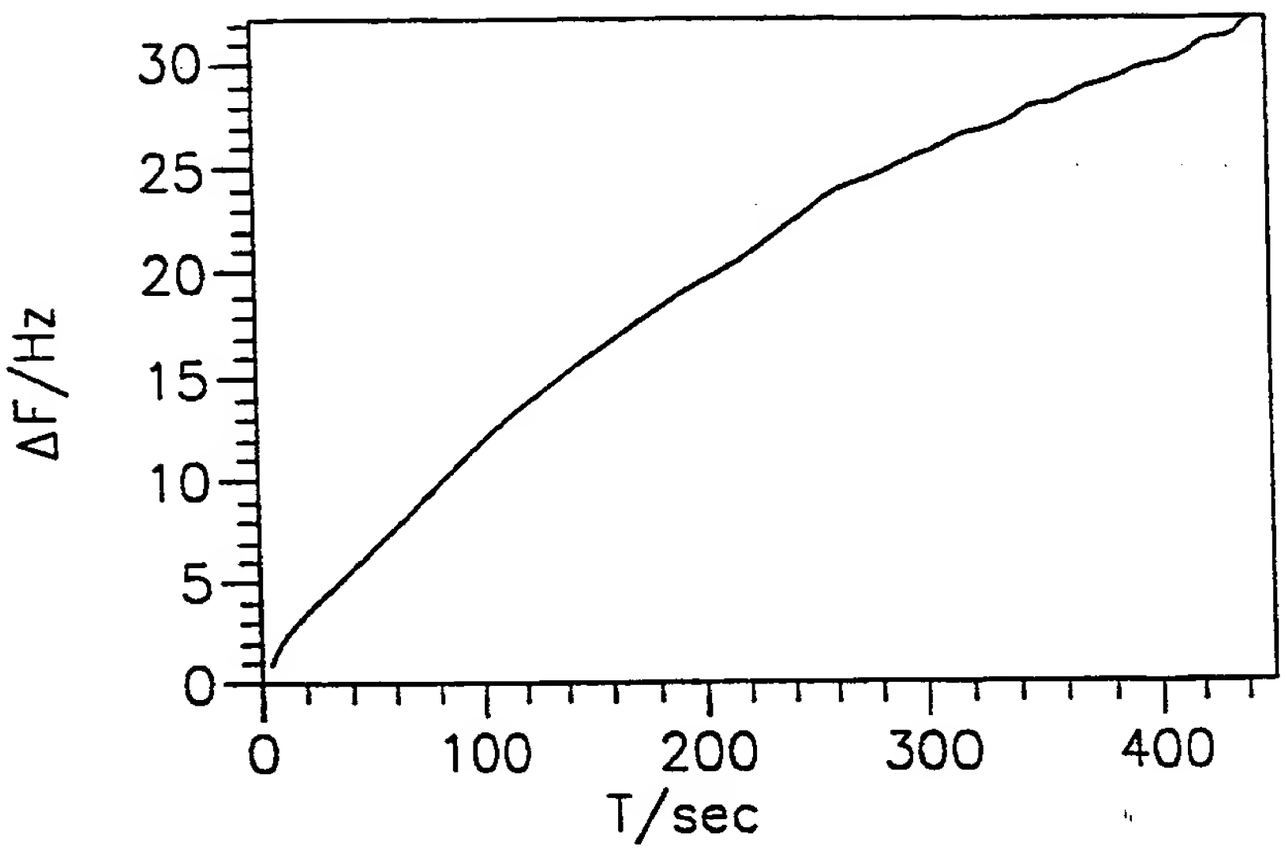


FIG.19

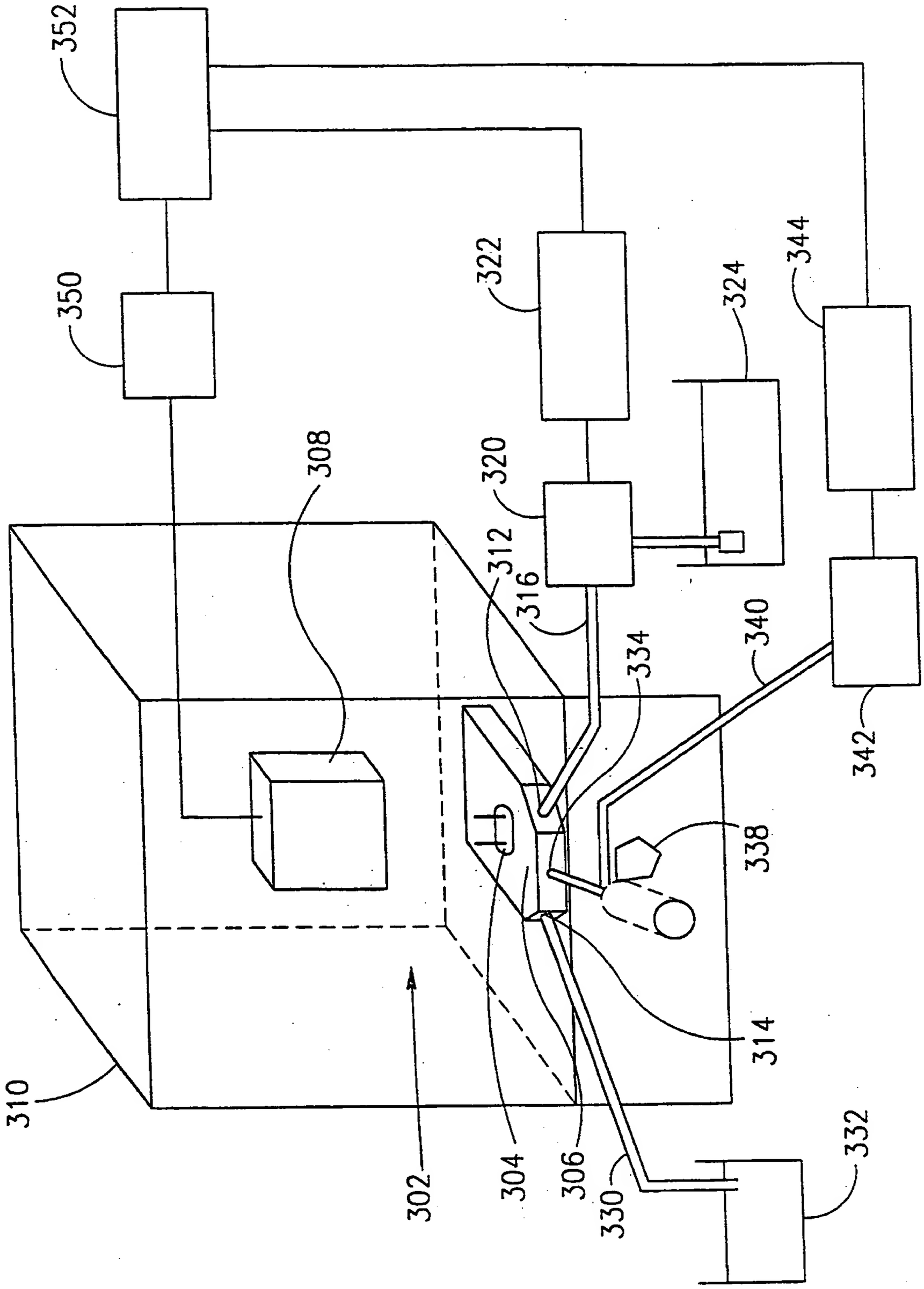

300
352
350
322
324
344
308
320
312
316
334
340
342
338
310
302
304
306
330
332
314

FIG.20

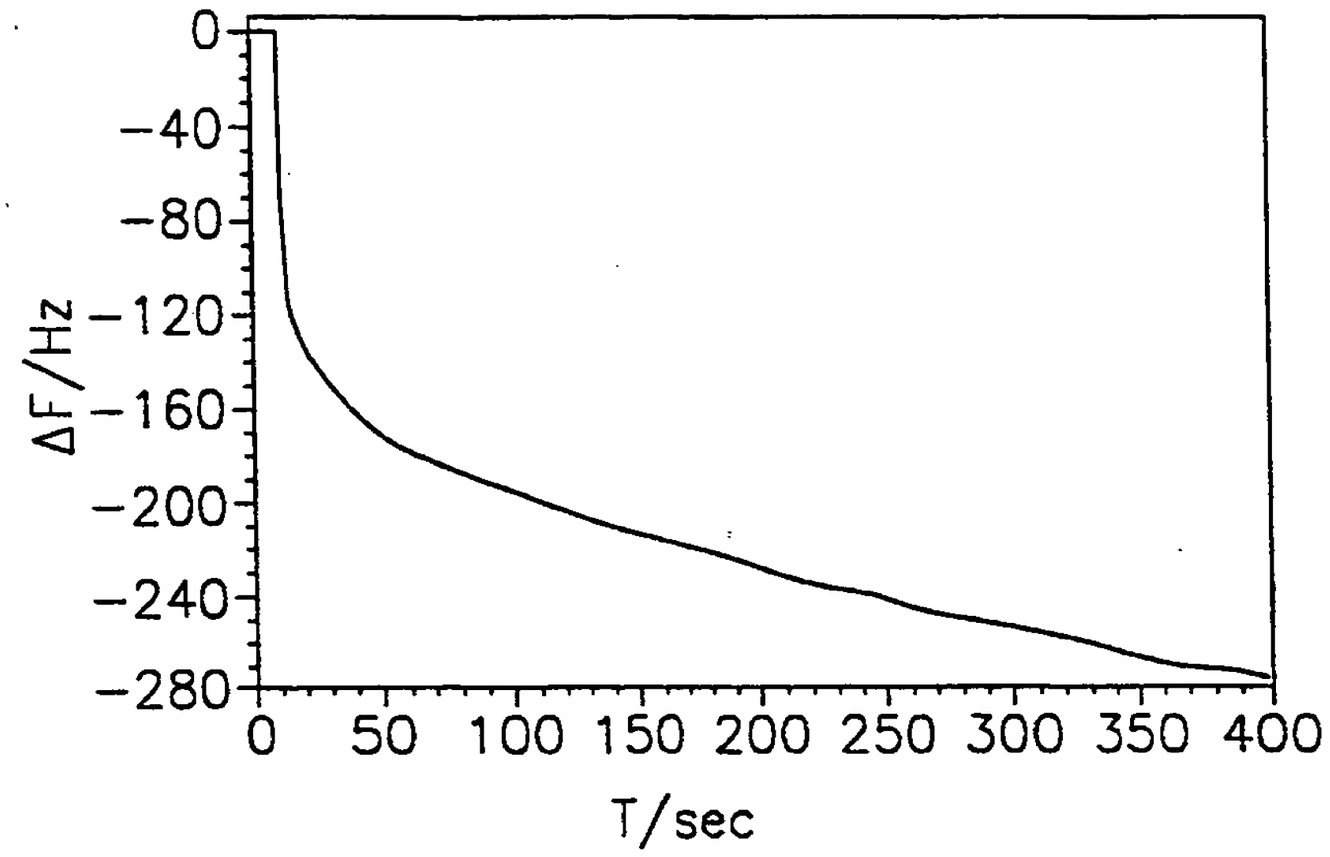

0
-40
-80
-120
-160
-200
-240
-280
ΔF/Hz
0
50
100
150
200
250
300
350
400
T/sec

FIG.21

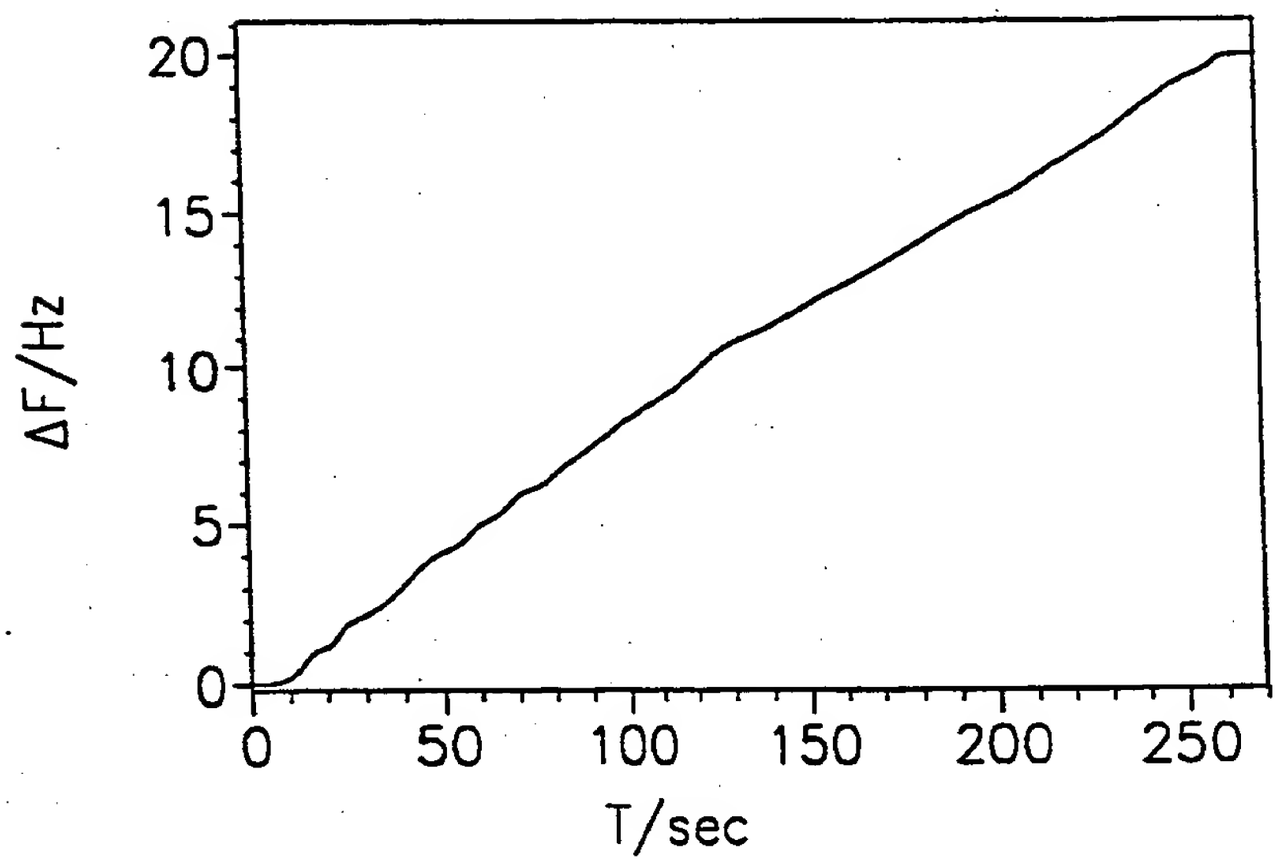

20
15
10
5
0
ΔF/Hz
0
50
100
150
200
250
T/sec

FIG.22

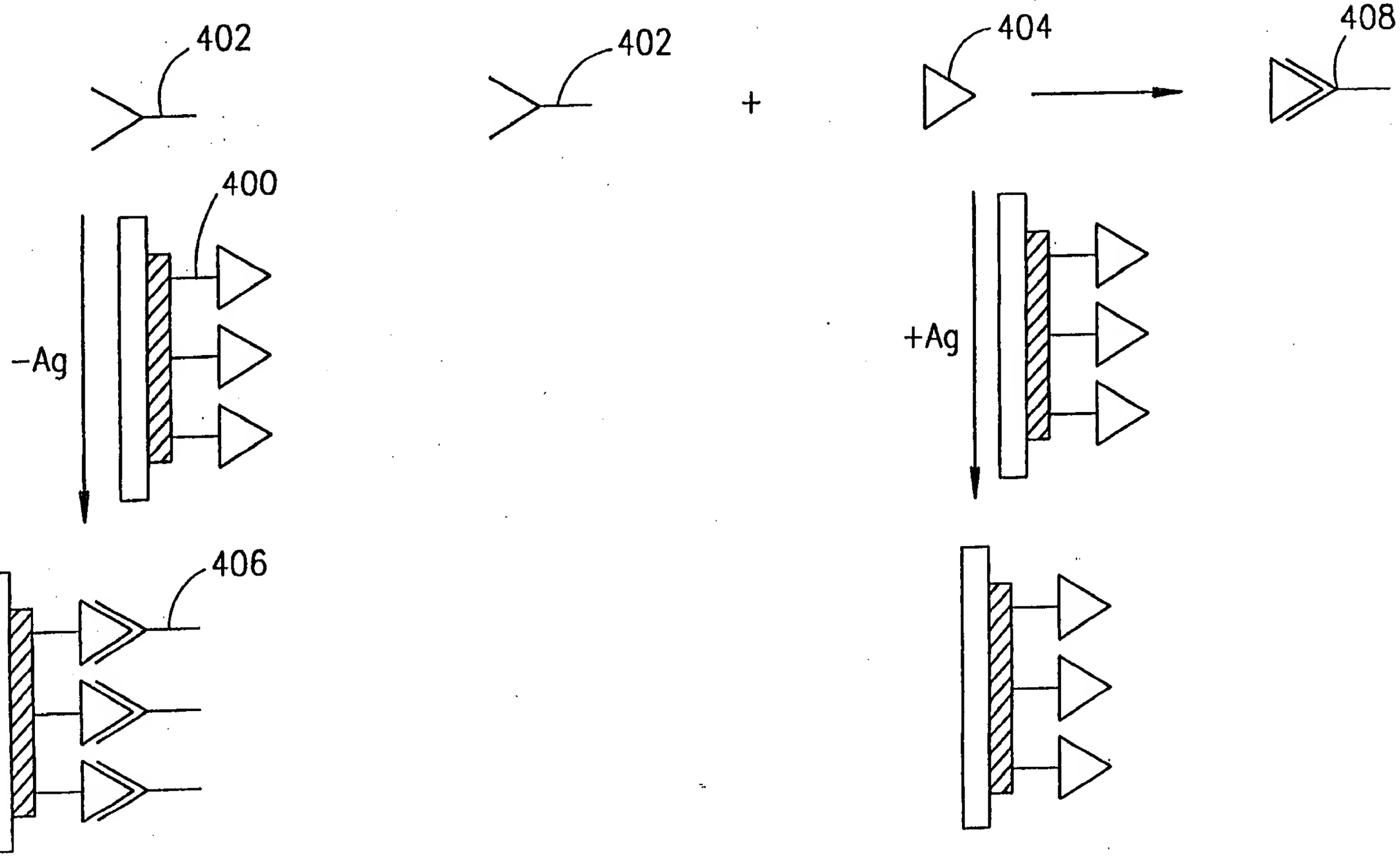


FIG.23

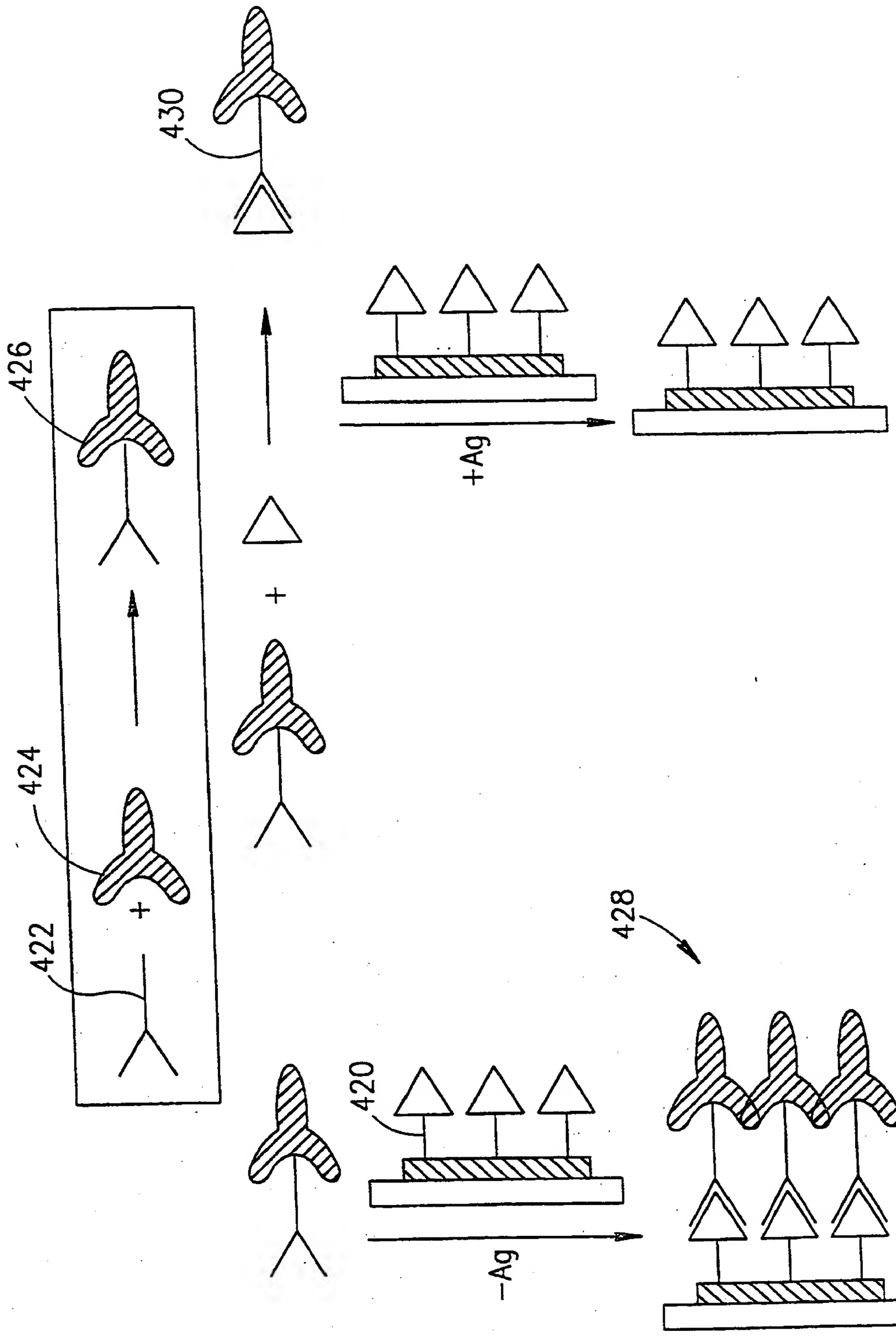


FIG.24

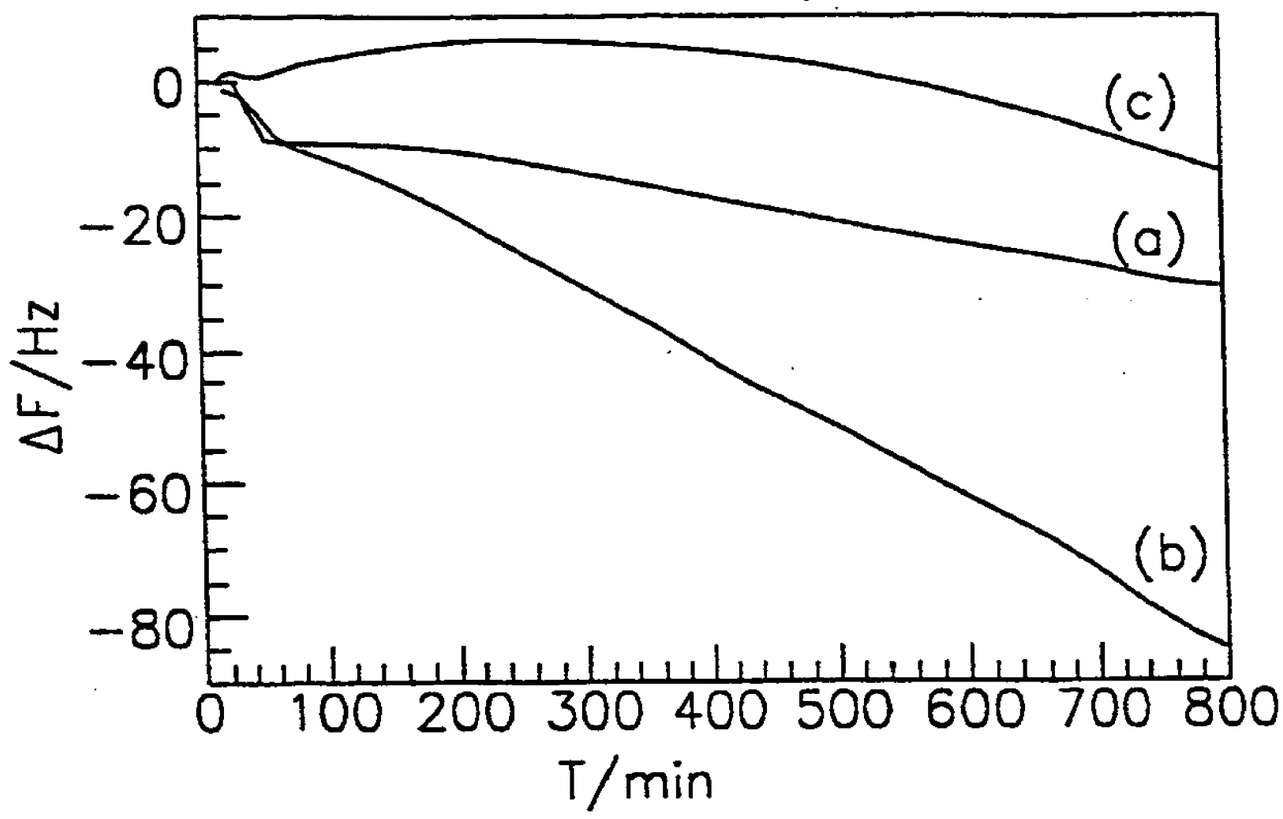

0
-20
-40
-60
-80
ΔF/Hz
0 100 200 300 400 500 600 700 800
T/min
(a)
(b)
(c)

FIG.25

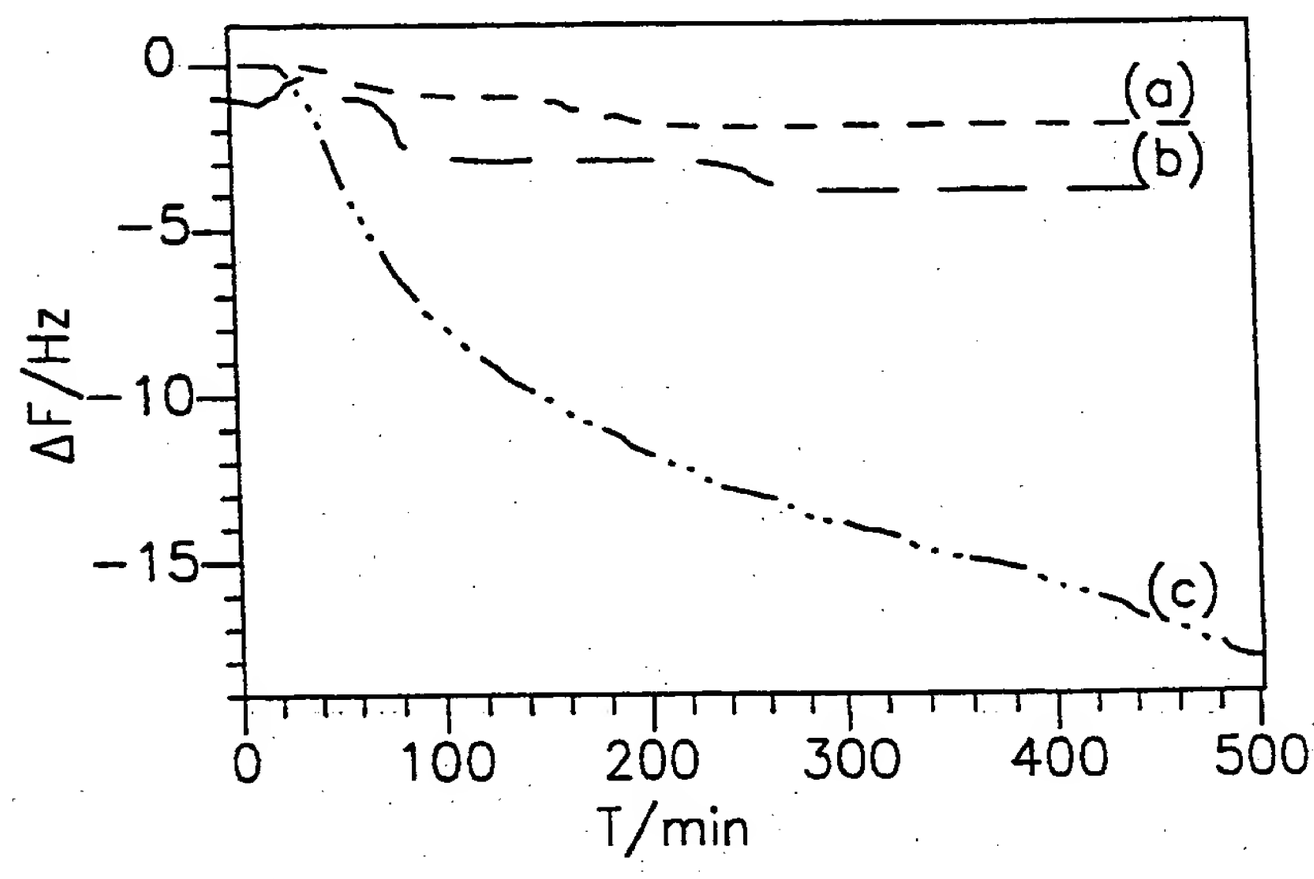

0
-5
-10
-15
ΔF/Hz
0 100 200 300 400 500
T/min
(a)
(b)
(c)

FIG.26

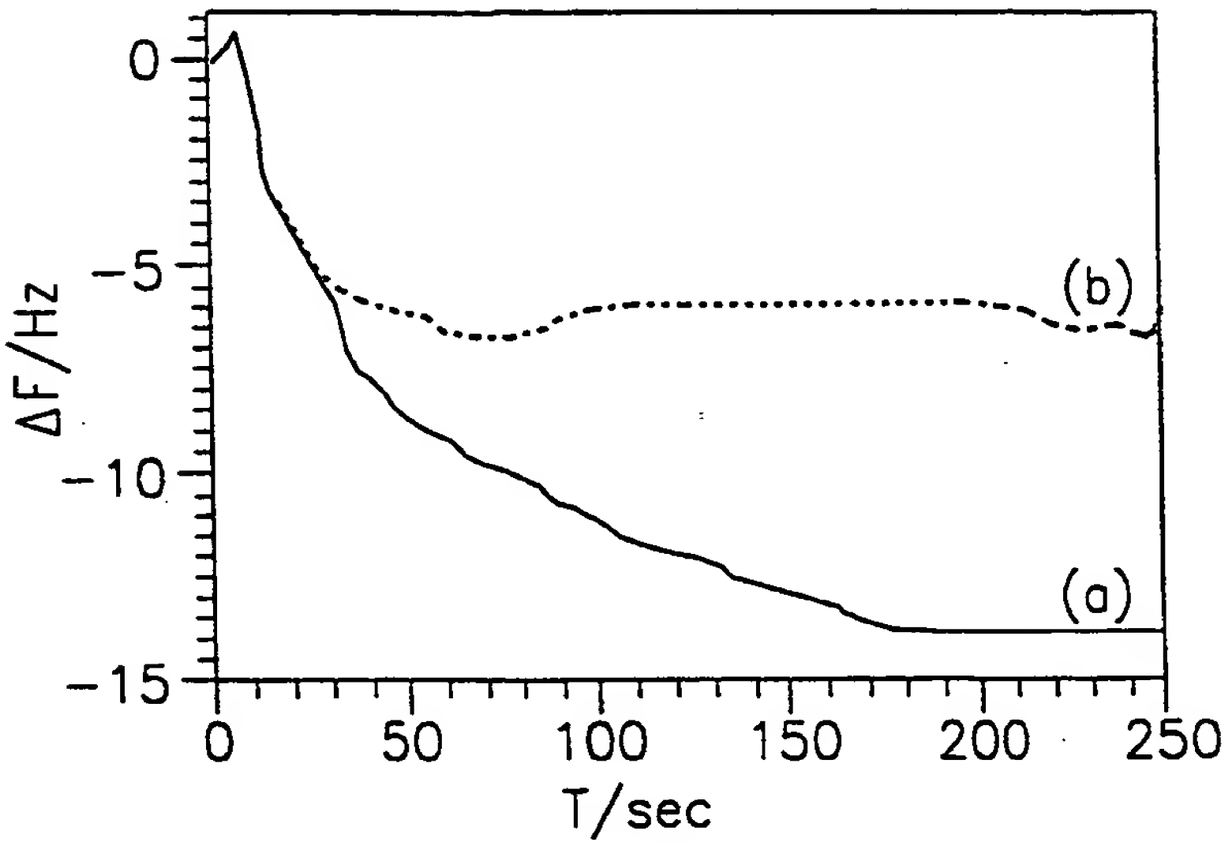


FIG.27A

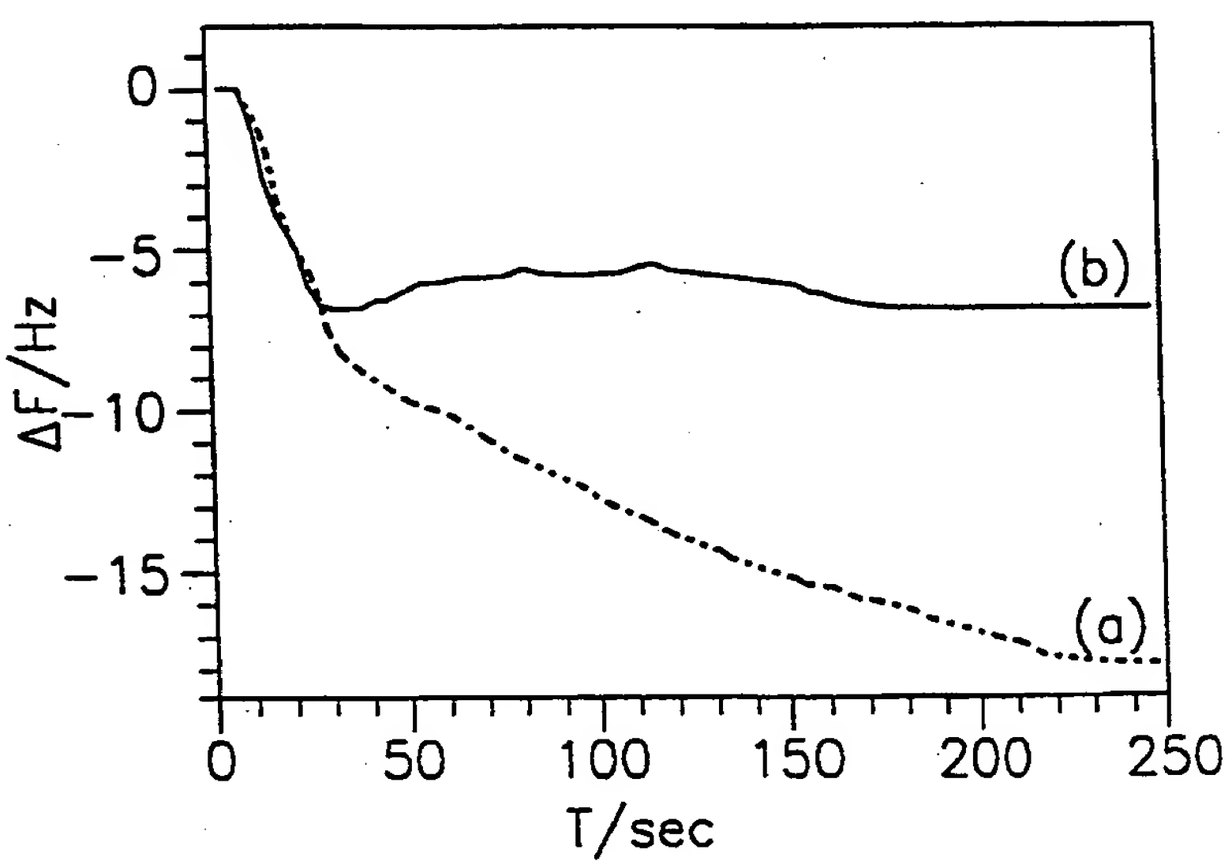


FIG.27B

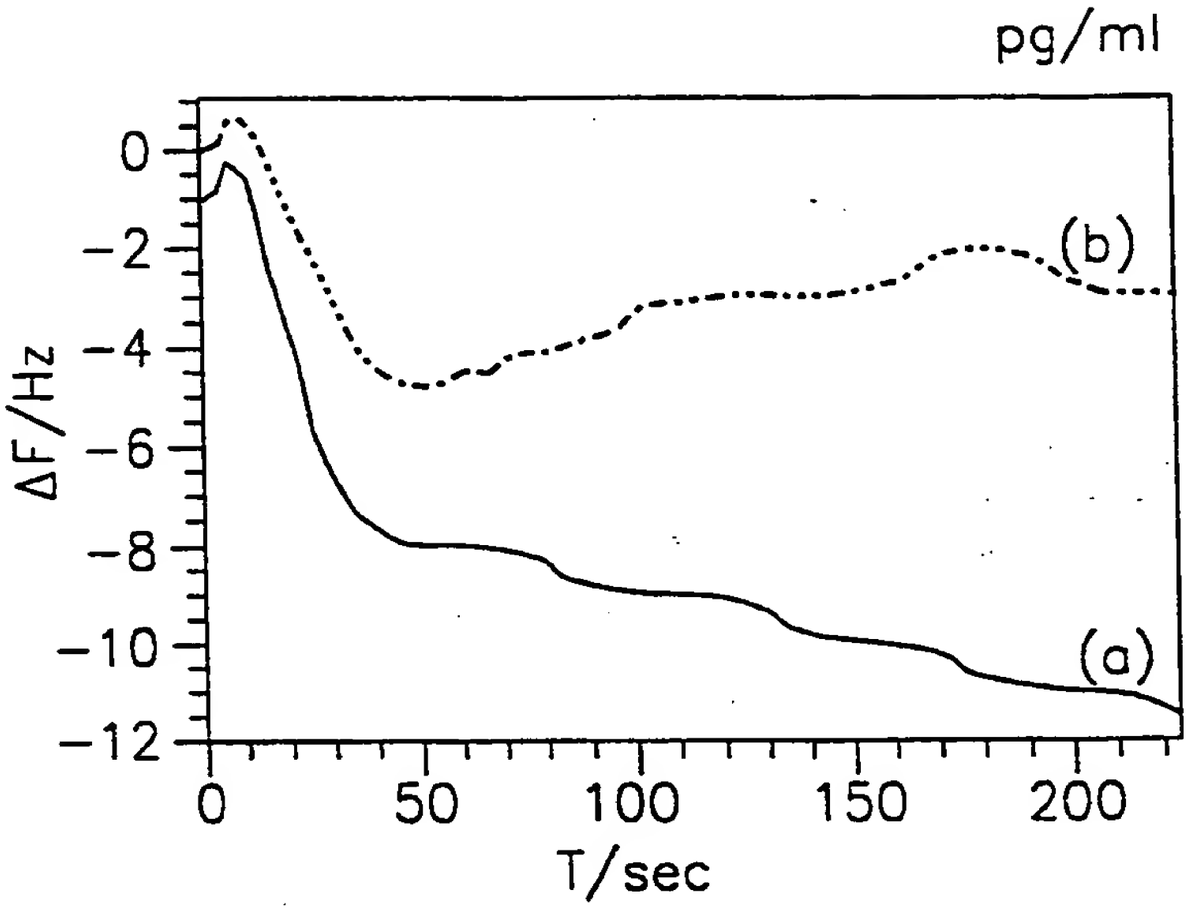


FIG.27C

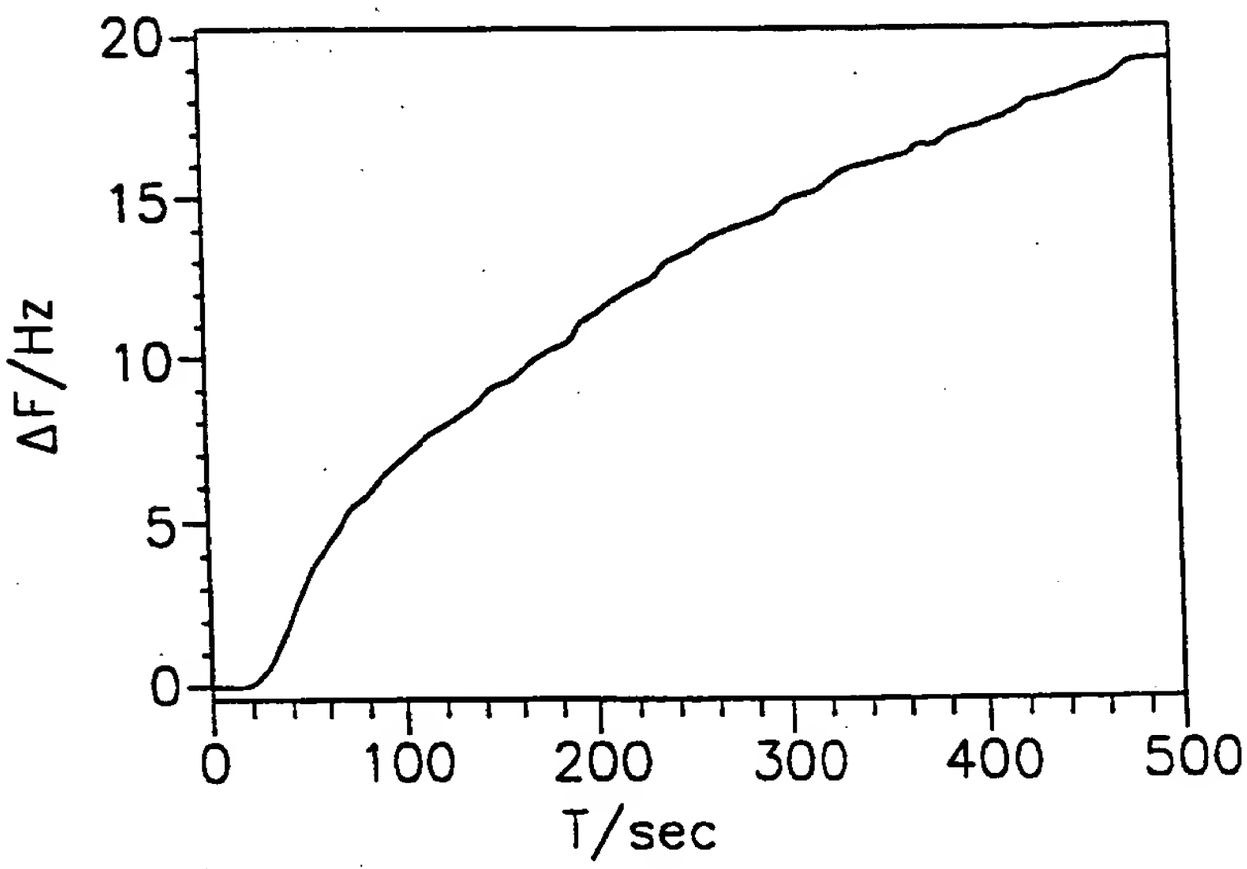


FIG.28A

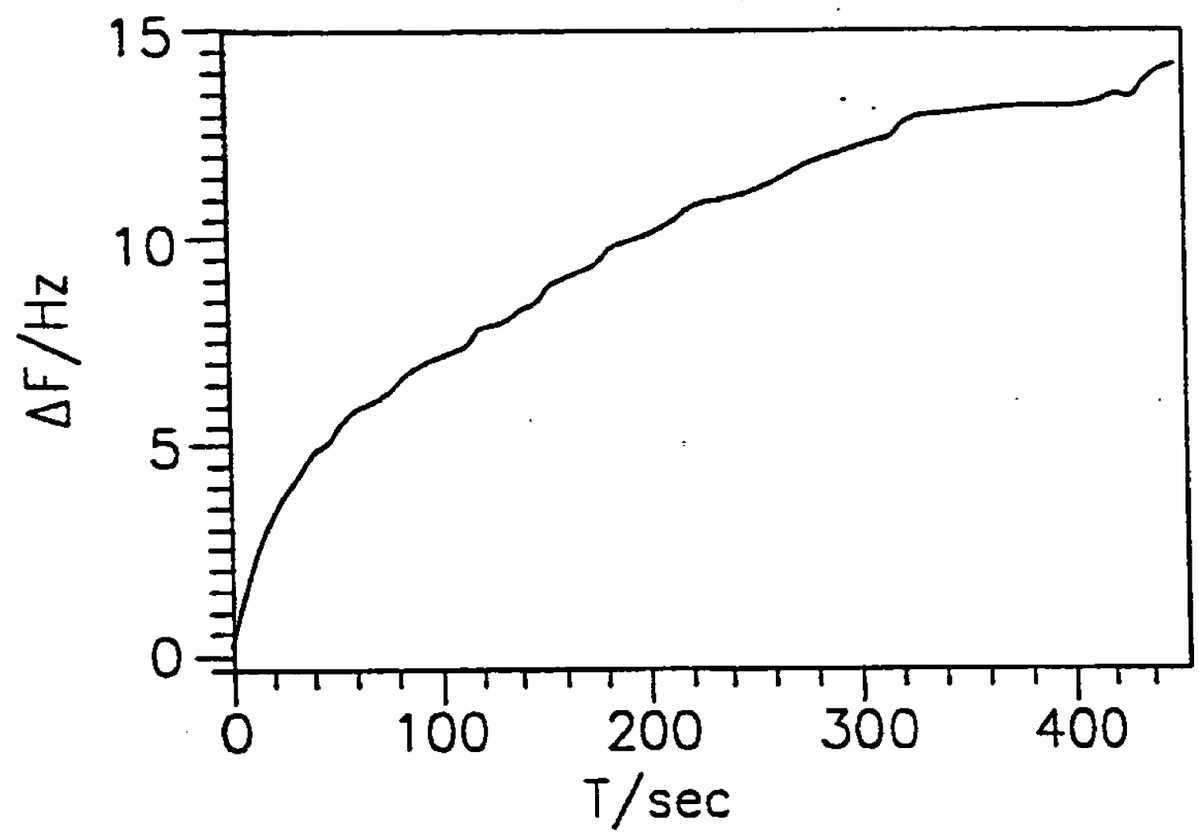


FIG.28B

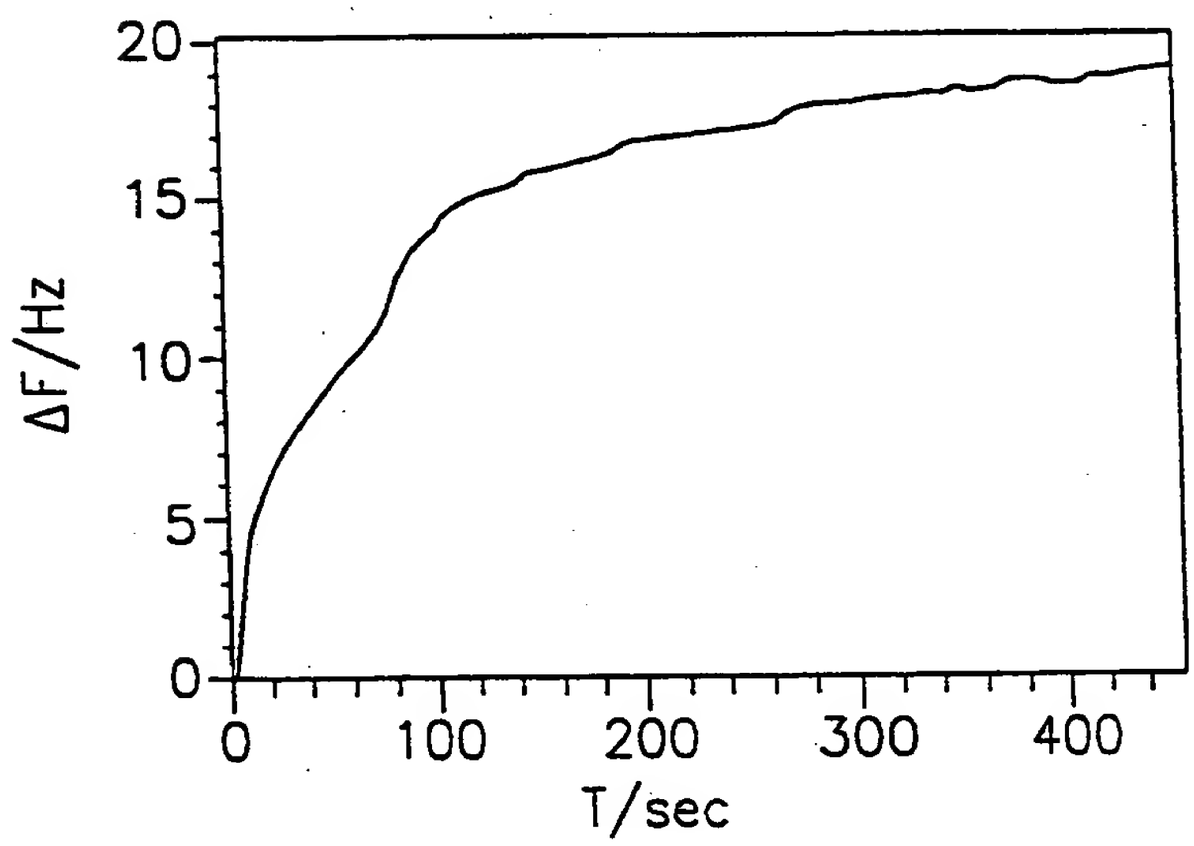


FIG.28C

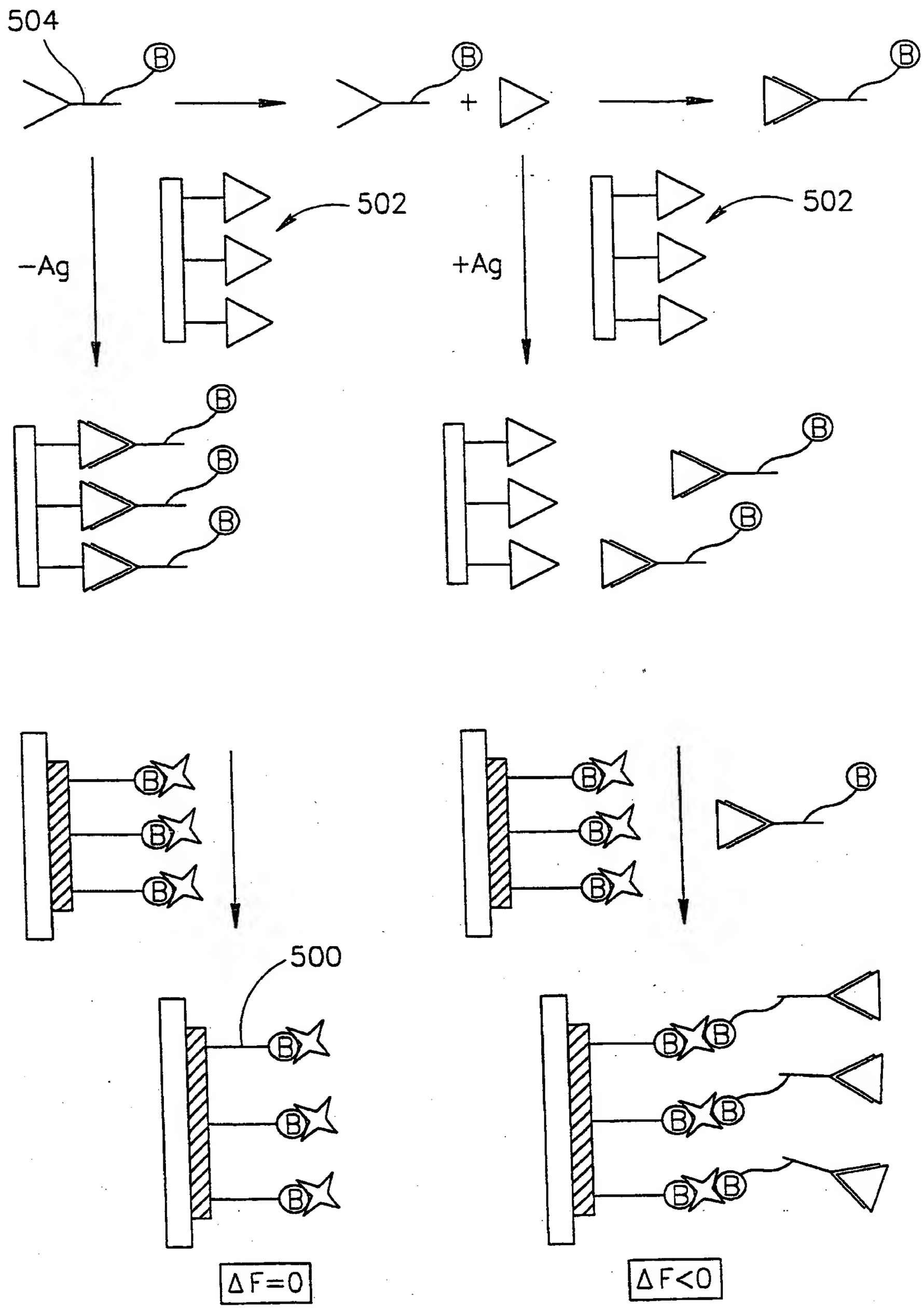


FIG.29

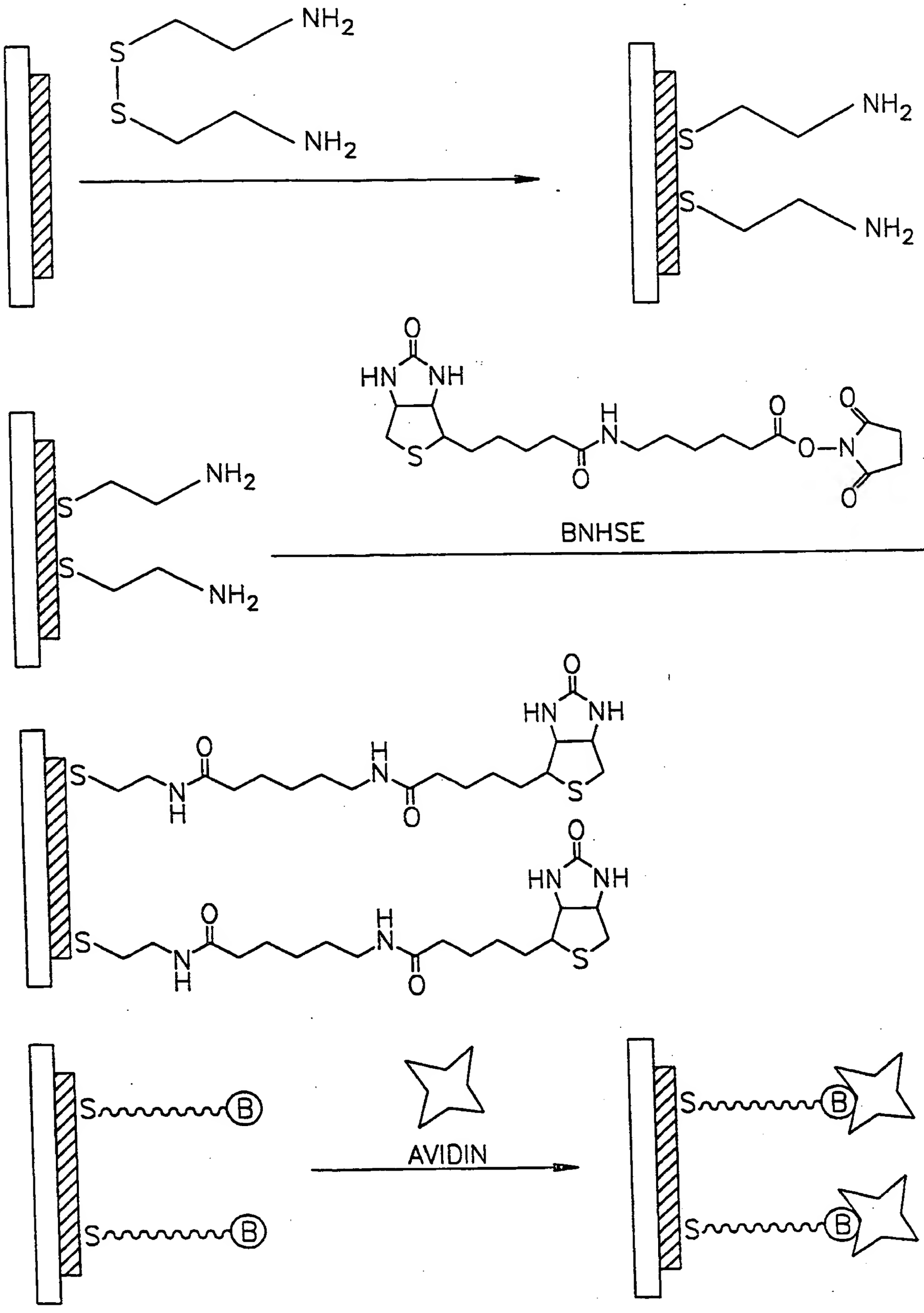


FIG.30

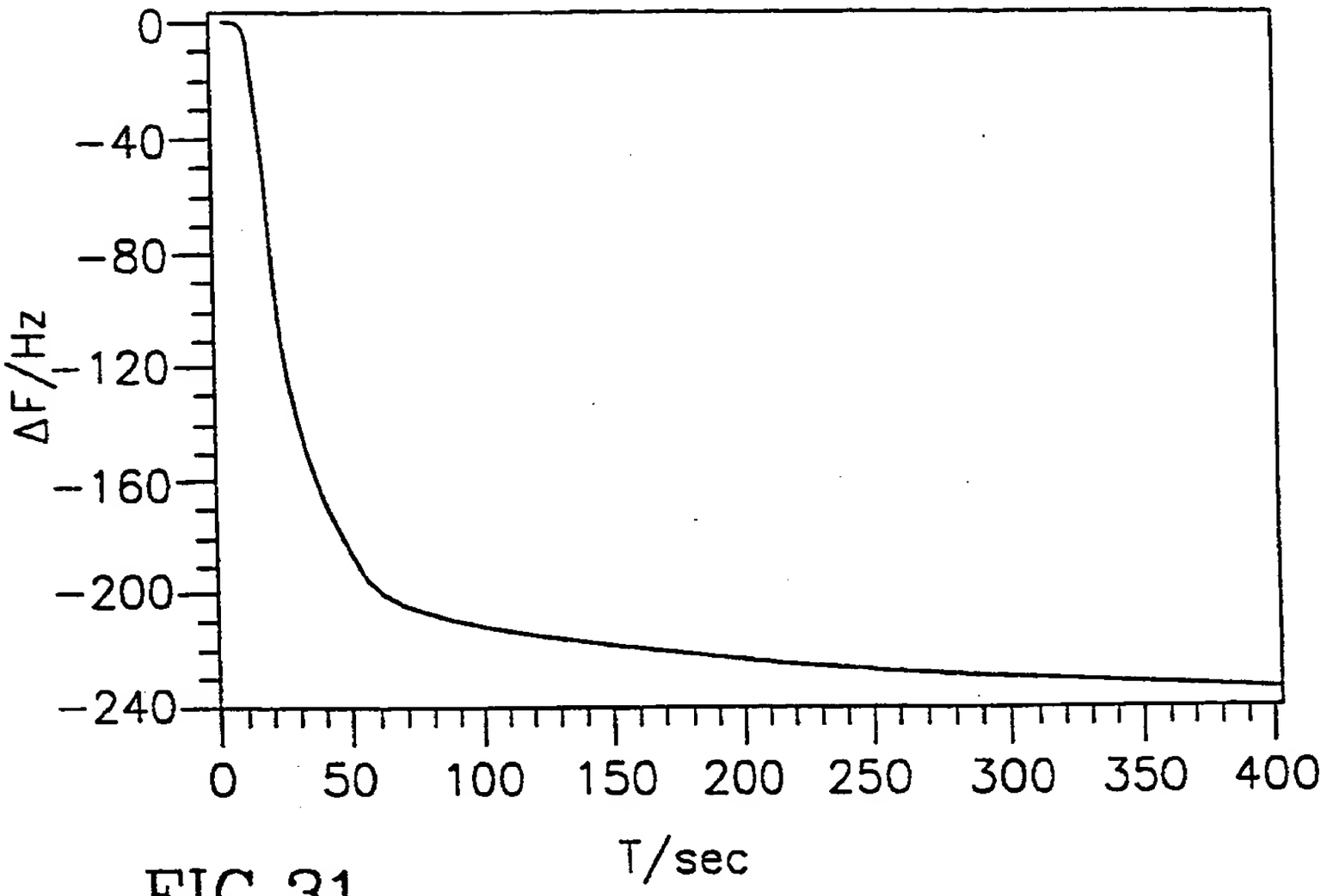

0
-40
-80
-120
-160
-200
-240
ΔF/Hz
0
50
100
150
200
250
300
350
400
T/sec

FIG.31

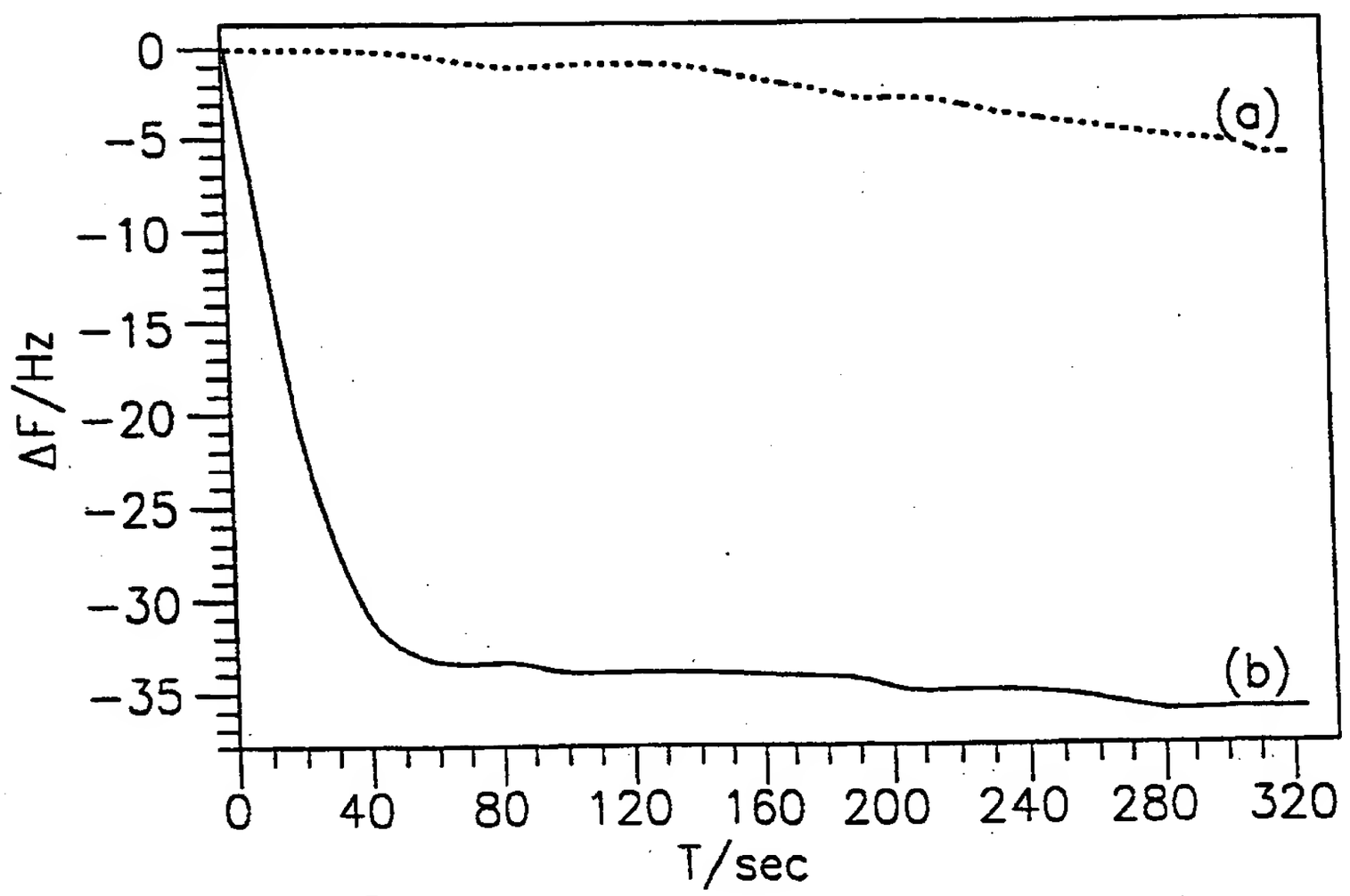

0
-5
-10
-15
-20
-25
-30
-35
ΔF/Hz
(a)
(b)
0
40
80
120
160
200
240
280
320
T/sec

FIG.32

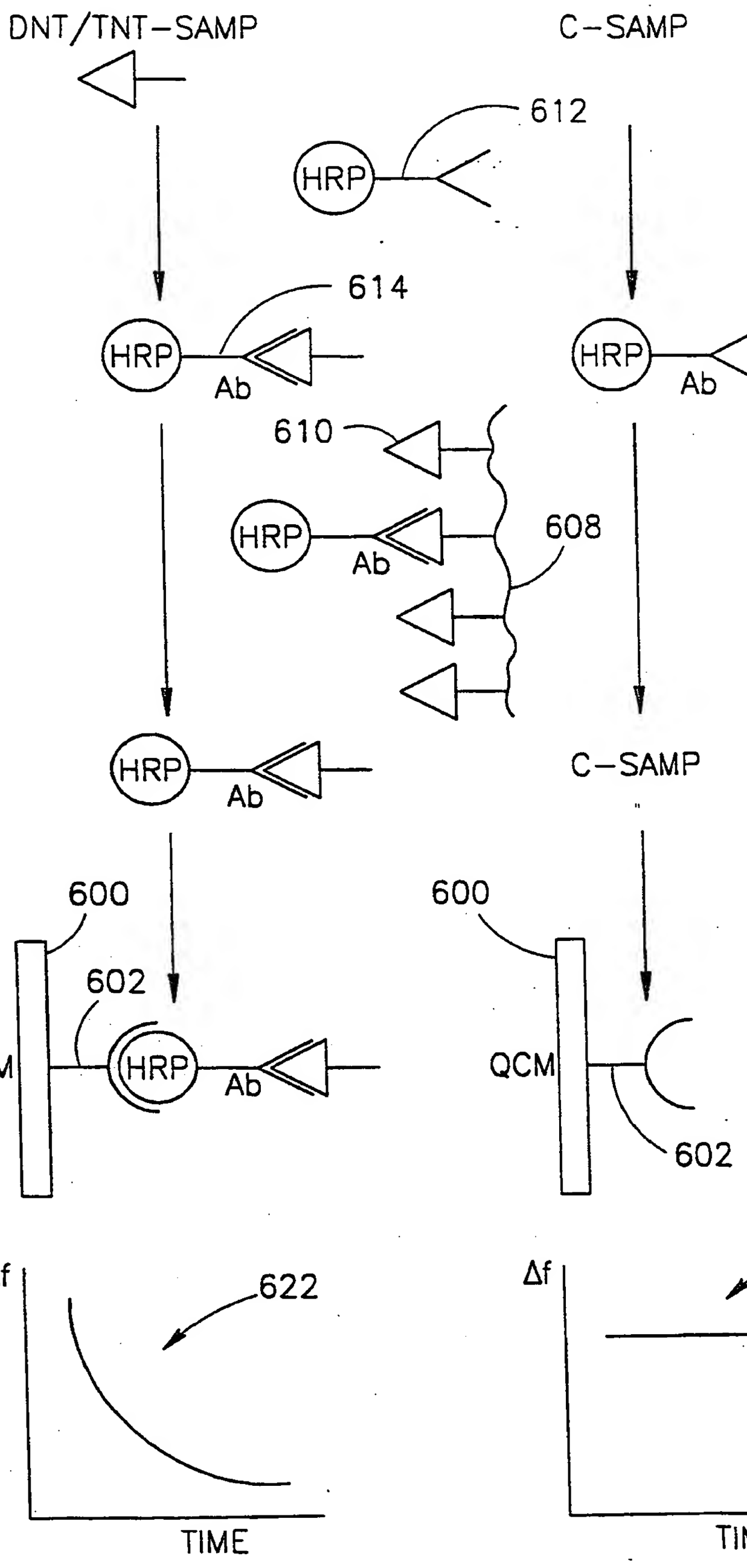

DNT/TNT-SAMP
C-SAMP
612
HRP
614
HRP
Ab
HRP
Ab
610
608
HRP
Ab
HRP
Ab
C-SAMP
600
602
QCM
HRP
Ab
600
QCM
602
Δf
622
TIME
Δf
620
TIME

FIG.33

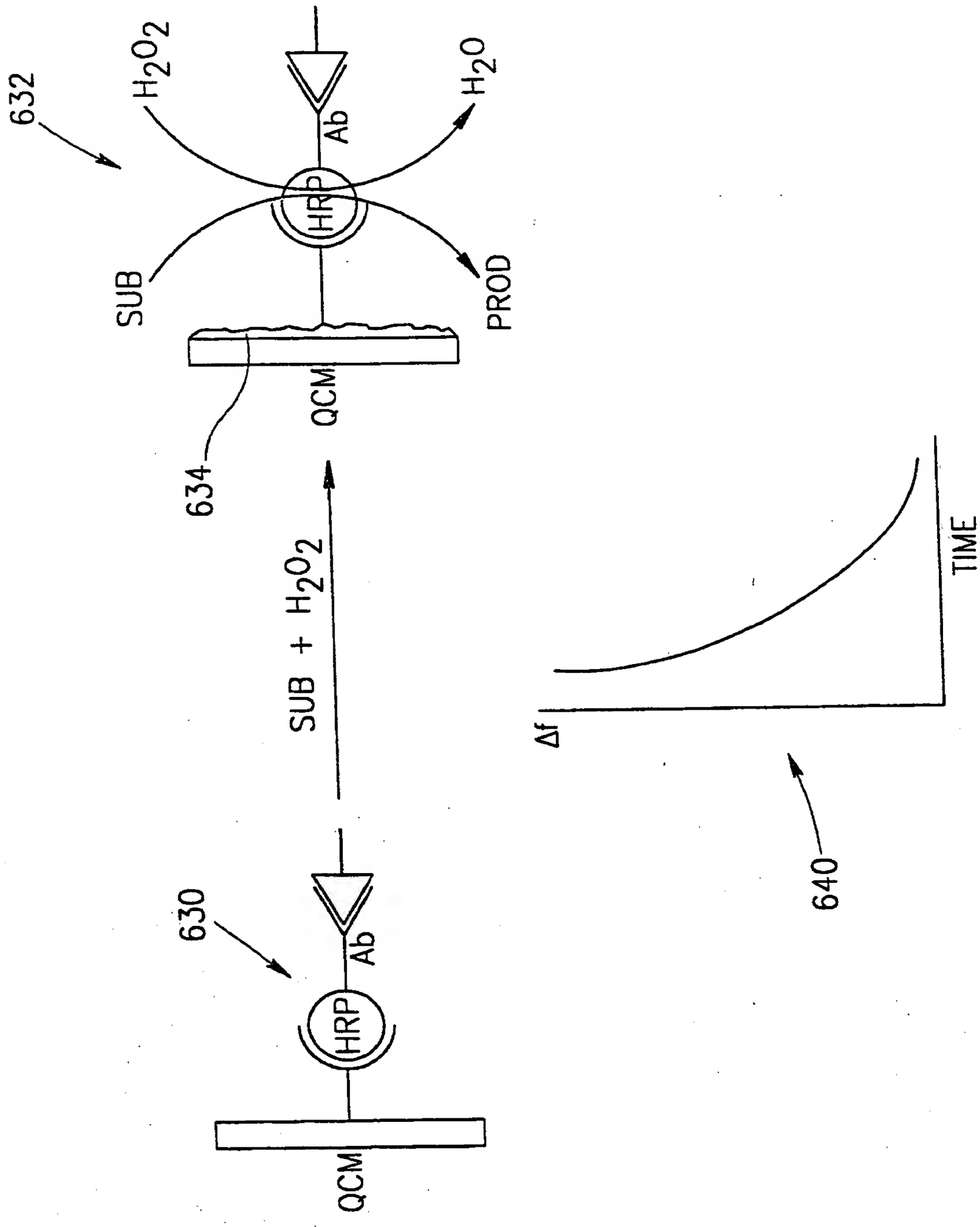

632
H_2O_2
H_2O
Ab
HRP
SUB
PROD
634
QCM
$SUB + H_2O_2$
630
Ab
HRP
QCM
Δf
TIME
640

FIG.34